SALES CONFERENCE NUMBER

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APRIL, 1941

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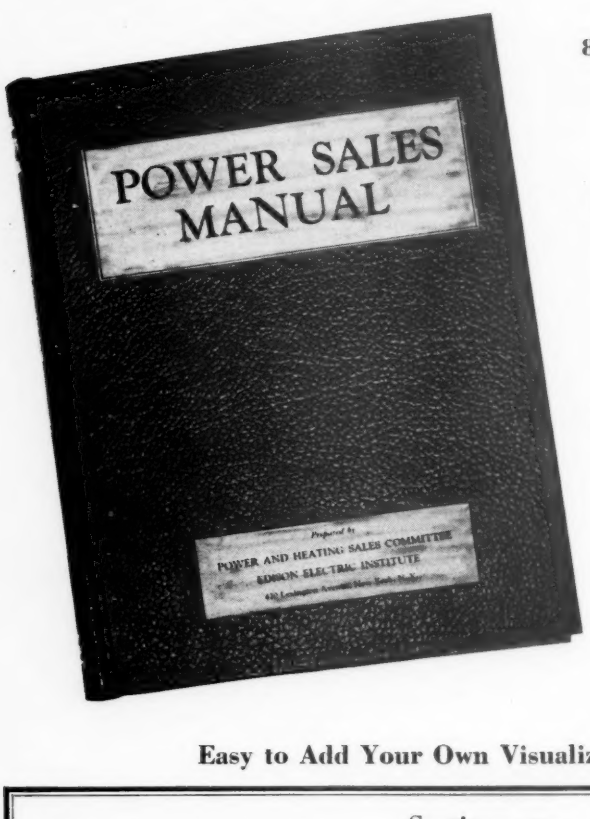

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EDISON ELECTRIC INSTITUTE BULLETIN

Volume 9 APRIL, 1941 No. 4

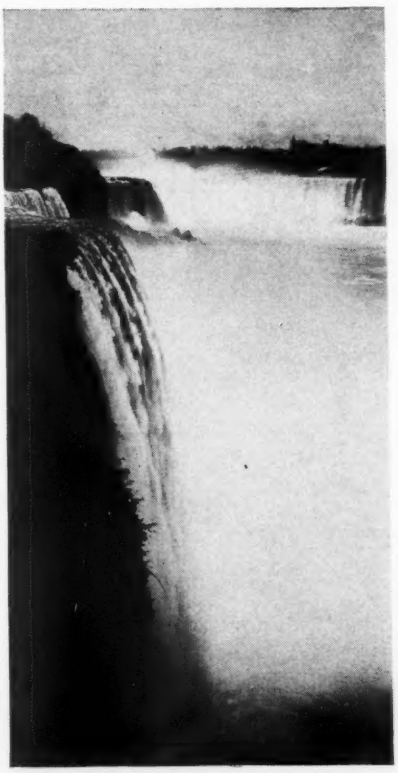
Dynamic Program for E. E. I. Convention Will Cover Subjects of Vital Interest

A PROGRAM in keeping with the times and as dynamic as the world events that are influencing the life and business of every American is nearing completion for the Ninth Annual Convention of the Edison Electric Institute to be held at Buffalo, N. Y., on June 2, 3, 4 and 5. The activities of the electric light and power industry will receive a new and intensive examination at the Convention with full regard for the increasingly important task the industry is performing as its part in the national defense effort. In addition, the delegates will have an exceptional opportunity to become better acquainted with the national and international situations in general through authoritative addresses by men who are filling key assignments in the coordination of business and government defense activities.

The chairman of the National Defense Committee of the National Association of Manufacturers, W. P. Witherow, president of the Blaw-Knox Company, will tell the convention of the stupendous effort that American industry is putting forth in doing its full share in National Defense. W. L. Batt, Deputy Director of the Office of Production Management, has chosen a subject that is of paramount interest to many business men today, the expansion of plant facilities for defense production. This address is expected to give the industry's executives a clearer vision of what will be expected of their companies in the serving of expanding production and should be most helpful as background in the laying out of possible expansion plans along a sound course. Military, economic and political impressions of the war in Europe will be related by Constantine Brown, writer for the Washington *Star* and a foreign correspondent distinguished for his knowledge of the European situation.

Carl Snyder, economist of the Federal Reserve System and author of "Capitalism the Creator," the book which has been called the most important study of sound economics since Adam Smith's "Wealth of Nations" will discuss Capitalism—Servant of All the People, with particular emphasis on the light and power industry as an outstanding exemplar of his subject.

Every speech to be given by leaders of the electrical industry will have vital bearing on the abnormal circumstances of operation under defense and war conditions. Sales, distribution, generating capacity, load characteristics and personnel management are among the phases of operation that will be discussed in relation to the adjustments that are already being made to meet rapidly changing conditions.



The responsibility the sales department has in these changing and critical times will be the subject of R. E. Fisher, chairman of the E.E.I. General Sales Committee. Tom P. Walker, Vice President, Gulf States Utilities Company, will demonstrate that plus sales and service values bring results in good will and revenue. The role of cooperative activities in winning public acceptance of utility service will be discussed by C. E. Greenwood, commercial director of the Institute. C. J. Strike, President, Idaho Power Company, will speak on water heating demand, on which his company recently conducted a unique and valuable survey.

The greater part of one session will be devoted to distribution. T. G. Hieronymus, Kansas City Power and Light Company, will discuss the emergency capabilities of distribution facilities, and a panel of three executives will present a symposium on recent improvements in distribution and the future possibilities in this field. M. W. Smith, Vice President, Westinghouse Electric and Manufacturing Company; E. S. Fields, Cincinnati Gas and Electric Company, and A. E. Silver, Ebasco Services, Incorporated, will be the speakers.

D. C. Prince, Manager of Commercial Engineering, General Electric Company, will stress the vital necessity for cooperation between the light and power industry and electrical manufacturers. C. W. Kellogg, President of the Institute, and Chief of Power in the Mining and Mineral Products Section of the Materials Branch of the Production Division of the O.P.M. will give a comprehensive survey of the electric industry in relation to both normal

and emergency activities. Several other speakers, who will be announced in the next issue of the BULLETIN, will have important messages for the Convention.

Committee meetings and the registration of delegates will occupy the opening day of the convention, Monday, June 2. General business sessions will be held Tuesday morning, Tuesday afternoon, Wednesday morning and Thursday morning. The concluding event of the program will be a luncheon-meeting Thursday afternoon at the Hotel Statler.

The Hotel Statler will be convention general headquarters, and registration and committee activities will be conducted there. All the business sessions will be held in the Kleinhans Music Hall, Buffalo's newest civic pride, a $1,300,000 monument to modern architecture and culture built principally with funds bequeathed the city by the late Edward L. and Mary Seaton Kleinhans. The auditorium, shaped like the prow of a ship, is air-conditioned and acoustically perfect; other rooms in the building provide generous and pleasant facilities for the convention activities.

This auditorium will be the scene on Tuesday evening of a distinguished musical program, especially arranged for the convention visitors. Rose Bampton, leading soprano of the Metropolitan Opera, will appear as guest soloist with the Buffalo Philharmonic Orchestra. Other entertainment has been scheduled for the intervals between convention sessions. There will be dancing in the Terrace Room of the Hotel Statler on Monday evening. On Tuesday a tea for the ladies, beginning at 4 p.m. will be followed by a general gathering in the Terrace Room after the close of the afternoon business session.

A buffet luncheon, to be given by an electrical manufacturer on Wednesday afternoon, will immediately precede a bus trip over the Niagara Frontier to Niagara Falls. Following tea at the Niagara Falls Country Club, the party will return about 6 p.m. to the Hotel Statler, where another manufacturer will entertain delegates and guests of the Convention. The bus trip will cover sixty-five miles along Canadian and American Boulevards—much of it along the edge of the beautiful Niagara River, vistas of the rapids, the gorge and the beautiful lower river valley with a twenty minute stop to view the spectacle of Niagara from the best possible vantage point. Routed to show the principal items of interest of the great Niagara Frontier Industrial area, including the power developments and the great electro chemical and electro metallurgical plants, this should prove to be a never to be forgotten trip for convention delegates.

Buffalo's location near Niagara Falls and the Canadian border is expected to add interest for the convention visitors and encourage attendance by members of the Canadian Electrical Association, trade association of the electric utilities in the Dominion and an affiliate of the Institute. This 1941 meeting will be the second national convention of the industry to be held in Buffalo. Forty-nine years ago, in February, 1892, the National Electric Light Association, predecessor of the Institute, held its fifteenth (semi-annual) convention in the Buffalo Public Library.

The General Convention Committee, which will serve as official hosts to the Convention consists of Colonel William Kelly, President, Buffalo, Niagara and Eastern Power Corporation, Chairman, Hermann Russell, President, Rochester Gas and Electric Corporation, Rochester, N. Y.; John L. Haley, President, Central New York Power Corporation, Syracuse, N. Y.; Ralph D. Jennison, President, New York State Electric and Gas Corporation, Binghamton, N. Y.; T. W. Connette, Vice President and General Manager, New York State Electric and Gas Corporation, Lockport, N. Y., and M. E. Skinner, Vice President, Buffalo Niagara Electric Corporation, Buffalo, N. Y.

Transportation and hotel information will shortly be sent to member companies. It is suggested that reservations be made as early as possible.

Front Entrance of Kleinhans Music Hall Where Convention Sessions Will be Held.

Industry Sales Forces Mobilize

Eighth Annual Sales Conference Breaks Attendance Records

By C. E. Greenwood
Commercial Director, Edison Electric Institute

EXPANSION in thinking and in action has characterized the commercial branch of the utility industry. Acceleration in sales work on all fronts has directly resulted from market investigations; joint deliberations of Association committees; and very important, national coordination of the utilities and the manufacturers of electrical equipment through EEI for planned sales action. Continued gains both in sales of equipment and in energy output in all classifications of our business have followed.

Following customary practice a check-up on the commercial status of the industry took place at the Edgewater Beach Hotel, Chicago, from March 31st through April 3rd when approximately 750 men and women of the electrical industry convened for the Eighth Annual Sales Conference of Edison Electric Institute. This gathering exceeded in numbers and in scope of discussion all previous industry meetings of the kind, attesting to the forefront position of SELLING as a prime force for growth of all industry branches.

Elements of doubt in solving problems ahead, both social and economic; National Defense versus civilian needs; priorities and their effect, were included in the subjects which served as a challenge to sales forces. It is elemental but factual to say that as outgo of funds mounts to new highs in our industry, the intake must grow at faster pace. The tempo of selling must accelerate. The history of all industrial development has been the serving of public needs. It is such service that has marked utility progress. There are many complex problems in supplying electric power in factory, store, office and in the home. These require the deliberation of keen minds. It is significant that over four days of the Conference there were sixty-two prepared messages from men and women of authority and experience on the live subjects of the times.

The pattern of this Conference was different from previous ones. The first two days were devoted to parallel sessions for the sale of Power and Heating to industry; the sale of equipment and service to the farm; the promotion of lighting in its educational and commercial aspects, and the technique of effective contacts with home-makers through the medium of home service.

There were two full-day sessions on Power and Heating Sales. In the papers given at these sessions is a rich store

A One-Minute Recess During a Business Session of the Conference in the Ballroom

of experience data. This special Conference was sponsored by the Power and Heating Sales Committee of EEI of which C. H. Purdy, Consumers Power Co., Jackson, Mich., is Chairman. Mr. Purdy and E. L. Kavanaugh of Detroit Edison Co., Detroit, Mich., presided at the Sessions. The Great Lakes Power Club joined the committee in sponsorship to make this the largest and most interesting power Sectional meeting. W. V. Woodward, President of the Club, opened the second day's session.

A day and a half program was carried through by the Farm Sales Committee of the Institute of which F. A. Coffin, Vice-President, Wisconsin Electric Power Co., Milwaukee, Wis., is Chairman. Rural representatives found these sessions informative and thought provoking.

H. P. J. Steinmetz, Vice-President, Public Service Electric & Gas Co., Newark, N. J., presided at the one-day session of the Lighting Sales Section. Everyone in attendance was hoping there might be a second day to continue the helpful discussion on this livest of services.

Miss Fern Snider of Georgia Power Co., Atlanta, Ga., who is Chairman of the Home Service Committee presided at the sessions on Home Economics. The S.R.O. sign was hung up in the morning session and adjournment was made to larger quarters in the afternoon. Commercial men attended in large numbers and received a convincing picture of the effective contributions of the women of our industry in Home Service work in promoting Electrical Living in the home.

The searching and enlightening discussions at all these meetings offered further knowledge on the subjects presented, and the hundreds of men who attended received a store of new ideas and an impetus to perform better on the job. These four Conferences likewise were a substantial preliminary to the two days of General Sessions which followed. R. E. Fisher, Vice-President, Pacific Gas & Electric Co., San Francisco, Calif., Chairman of the General Sales Committee of the Institute and General Chairman of the Conference was introduced by Edwin Vennard, Chairman of the Program Committee and Vice-President of Middle West Service Co., Chicago, Ill., who opened the Conference.

Interest was indicated in the well attended sessions which continued throughout the two days and

MR. GREENWOOD

closed with a National Defense luncheon on Thursday noon when C. W. Kellogg, our President, and C. H. Lang, Chairman of the Apparatus Committee of General Electric Co., Schenectady, N. Y., addressed the Conference on National Defense situations. They were followed by Dr. Preston Bradley, Pastor of The Peoples Church of Chicago, who was the last speaker at the Conference, and left a serious but inspiring word of courage for today.

The addresses of the speakers at the General Sessions appear in this issue of the EEI BULLETIN. Papers presented at the Power, Lighting and Rural Sales meetings, and also the Home Service Section, are to be mailed to those who registered.

Sandwiched in with the numerous sessions of Monday and Tuesday were meetings of the organized committees which issued reports of progress at the Dinner Meeting of the *General Sales Committee* on Tuesday, April 1, at which there were 40 in attendance. "I wish that some of the top executives of our member companies might be sitting here to grasp at first hand the breadth of commercial thinking and the work accomplished by the organization committees and the joint program groups," said Earl Fisher, Chairman of the meeting. Among a few of the high spots of committee achievement were the following:

The *Power and Heating Sales Committee* (C. H. Purdy, Chairman) exhibited the sections of a Power Sales Manual which has been in the making for the past two years and is to be available to the industry in loose-leaf binder on June first. The *Electric Water Heating Committee* (C. J. Strike, Chairman) has made an extensive survey of types of water heaters, and services offered by utility companies, and will shortly issue a report which will be beneficial in the standardization process. The status of fluorescent lighting today from the viewpoint of a hundred-odd utilities is to be included in a report of the *Lighting Sales Committee* (S. L. Drumm, Chairman) which is now in production.

The *Wiring Committee* (G. W. Hart, Chairman) has produced an extensive line of promotional material to aid in practical application of new low-cost wiring materials and methods. These include wiring kits and Code instruction booklets for utility men who are engaged in wiring development; illustrated talks with Kodachrome slides to be used in educational work in connection with rewiring commercial occupancies and residences; a Residence Wiring Manual is about completed, and other useful promotional items are in the making.

The *Home Lighting Equipment Sales Committee* (Harry Restofski, Chairman) has prepared a tie-in program with lighting equipment groups of the industry and is encouraging better and more intensive sales methods for re-lighting and re-fixturing homes, a National Prize Contest with substantial prizes being a stimulating influence. The survey of the electrical merchandising situation, especially as it bears on the cooperative activities of utilities and dealers, is being carried through by the *Utility-Dealer Sales Committee* (R. P. Wagner, Chairman). Another feature of the program of this committee is the development in conjunction with the Modern Kitchen Bureau of a series of sound slide films for dealer sales training.

Our *Air Conditioning Committee* (H. H. Mather, Chairman) has its Annual Statistical Survey in the making, and among other activities is compiling useful technical information on room cooling equipment. Space does not permit of the outlining of the promotion of Dairy Electrification by the *Farm Sales Committee* (F. A. Coffin, Chairman) and of the activities of the *Home Service Committee* (Miss Fern Snider, Chairman) and *Household Appliances Committee* (M. R. Rodger, Chairman).

Four National Promotional Programs are now running at top speed and can only be retarded through the influence

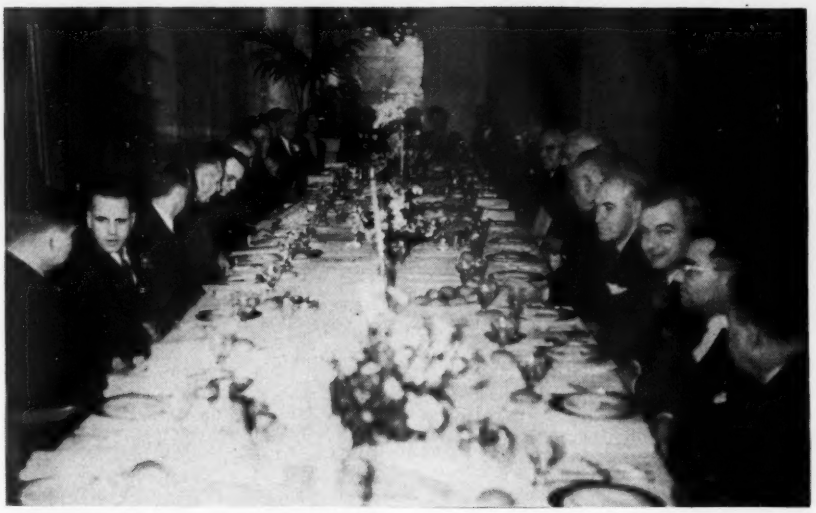
of priorities on materials which directly affect the production of electrical equipment. The Commercial Electric Cooking Council (J. F. Porter, Jr., Vice-President, Kansas City Power & Light Co., Kansas City, Mo., Chairman) is expanding its scope of effort and is offering immediately to utility companies a new series of mailing pieces and a Sales Manual written from the viewpoint of the food service dispenser. These will be supplemented by numerous other promotional items and it is expected will be followed later with trade press advertising.

The Better Light-Better Sight Bureau (J. E. North, Cleveland Electric Illuminating Co., Cleveland, Ohio, Retiring Chairman) continues its eighth year in the promotion of the educational and commercial aspects of light in its relation to Better Seeing. At a meeting of the Executive Committee of the Bureau, H. P. J. Steinmetz, Vice-President of the Public Service Electric and Gas Co. of New Jersey was elected Chairman.

The Electric Water Systems Council (R. T. Duncan, Detroit Edison Co., Detroit, Mich., Chairman) likewise expands its effort. Farm income has increased, and it is recognized that since running water in the farm home is the fundamental requirement for better living, it is timely to intensify promotional effort. Mailing pieces, booklets, a sound slide film and a radio transcription are among the tools offered to help salesmen obtain greater results in the sales of equipment and of service.

At the meeting of the Executive Committee of the Modern Kitchen Bureau plans for the second half-year promotion were presented and approved and there was stock-taking on the progress of the Bureau activities during the first months of the calendar year. In the General Session of the Conference, W. H. Sammis, Vice-President, Commonwealth & Southern Corp., New York, N. Y., the Chairman, pointed out conclusively the changes brought about by the Modern Kitchen Program in styling in the American kitchen, now planned for step-saving and completely electrified. Changes are co-incident with Bureau activities. Amazing results were shown in the mass of complete electric kitchens that are features of apartments and private dwellings.

In a section of the Ballroom of the Edgewater Beach Hotel, an imposing exhibit was arranged of all promotional material available to utilities, manufacturers and dealers for their use and assistance in molding public acceptance for electrical equipment which can benefit electrical consumers. This in itself is indicative of the creative thought and helpful service of the groups that combine in these industry promotions.



The General Sales Committee Starts Its Evening Meeting With a Dinner.

In a letter of transmittal with circular notice of this Conference, Mr. C. W. Kellogg, President of the Institute, stated:

"In these times of national stress we should hold and develop the use of electricity in the daily life of the people. Selling will therefore continue to be an important consideration this year.

"The subject programs, which appear in the attached circular, will appeal to you as an indication of timely thinking. In the General Sessions the presentations will cover the broader aspects of electrical development and utility relationships. Special sessions get down to the details of this effort.

"There will be two full days for discussion of Power Loads, which are so vital a factor in our national defense effort. Rural Sales, Lighting Sales and Home Service are highlighted—all important in enriching home life in both the present and post-war periods.

"I would commend this Eighth Annual Sales Conference to you as an important four-day informational and educational period for your pivotal men, deserving of your support, and express the hope that you will see your way clear to send a representative delegation to the meetings."

Utility companies from Coast to Coast answered this call and supported these "informational and educational" meetings.

In order that no opportunity would be lost in keeping the Modern Kitchen Bureau promotion to the fore, there was a "Short Course" offered in practical cooking in the Ballroom foyer before and after sessions. Attractive young ladies lured candidates to the He-Man cook operating at an electric range, and qualifiers in the cooking test earned a printed certificate of merit as He-Man Cooks. Over 100 certificates were awarded. More than 40 others that lost must practice egg-breaking. It is suggested that these losers might be more successful in less glamorous surroundings.

Among the special events of the week was a Luncheon sponsored by the Public Utilities Advertising Association for advertising and promotional men who were present at the Conference. A luncheon was tendered by the Staff of *McCall's Magazine* to the ladies attending the Home Service Conference representing utility and manufacturer groups. A Reception and Tea was given by General Electric Company, with Miss Edwina Nolan as Hostess, to the ladies in attendance at the meetings and to other invited guests. Members of the Staff of Crowell Publishing Company, with Ada Bessie Swann as Hostess, entertained at a Reception and Cocktail Party.

Following customary practice our manufacturer friends occupied the stage at the close of the day with Open House. Here were inter-State handshakes and side business conferences even in a social atmosphere.

And now for the opening address of the General Sessions by R. E. Fisher, Vice-President, Pacific Gas & Electric Co., San Francisco, Calif., Chairman of the Conference.

Preparedness for the Post War Period

By R. E. Fisher

Chairman, General Sales Committee, Edison Electric Institute

An address before the Eighth Annual Sales Conference, Edison Electric Institute, Chicago, March 31-April 3

APRIL seems to be a fateful month for our country—more than one war has been declared in that month and many noted events in our history had their genesis in this early month of Spring. The events already taking place in this April of 1941 are almost as ominous in their portent as those of the first days of April, 1917. The world situation has already wrought drastic changes in our social and economic order. All of us here have seen and probably experienced some changes in our economy from a peacetime to a wartime basis. Furthermore, we all know that from now on our industry will be brought more and more into the center of our country's "all-out" effort.

We have volunteered to do our all to achieve the goal that the nation has set. And certainly no other industry is more vitally important and in a position to contribute more to a program of national defense than is ours. I need not enumerate the many ways in which the light and power industry is indispensable to the nation's job in the present emergency. It is playing, and will continue to play, a big part in making and keeping our country the arsenal and warehouse for the democracies of the world in their battle for existence. Modern war machines are the product of modern industry. American industry leads the world today largely because of its use of electric power in modern and efficient methods of mass production.

The American farmer is also an important factor in this national emergency. The use of electricity on the farm will enable the farmer to do his part more efficiently during this period than during World War I. In 1917 less than three per cent of the nation's farms had electric service. Today, due to the pioneering by private utilities, over two million farms, representing one-third of the nation's total, are electrified.

It is most gratifying and assuring, in an emergency of this magnitude, that our industry is prepared and ready to do its full share. It is ready—not only

MR. FISHER

with plants and other essential physical properties—but with trained, capable and alert manpower as well. So far as can be foreseen at this time, except for a few isolated situations, there will be an ample supply of power in 1941 and 1942 for sustained business operations as well as for all national defense requirements. For 1943 and subsequent years the plans that are being initiated and developed by private utilities unquestionably will insure adequate power for all demands. Our generating capacity today exceeds 42 million kw which is four and one-half times as much power as was available in 1917. Ninety per cent of this is furnished by private utilities. It must be borne in mind also that the increased use of power which will come from employing more shifts in various factories does not add appreciably to the peak load on power systems.

There is no justifiable reason for any concern of governmental agencies for the private utilities in the present situation. If power now available or presently to be available from Federal projects is correlated and distributed on a sound basis with power distributed by private utilities, the electric industry can be further strengthened against any eventuality.

In considering preparedness for the post-war period, I am sure all of you will agree that how, and in what manner, our post-war functions are carried on depends to a very large extent on what we do now and during the balance of the present emergency. In fact, it is not a bit too soon to start planning for that time. No one knows whether it will be months or years, but we do know that our country, and the world for that matter, have emerged from other tragedies. This one, too, must come to an end.

The present situation might be likened to an experience I recently had. As I was going home from the office one evening I witnessed a bad traffic accident on a busy residential corner. Two cars trying to cross an intersection collided, badly damaging both vehicles and injuring the occupants rather seriously.

There was, of course, the immediate effort to relieve the injured while awaiting the ambulances; there were the gathering crowds, the stalled traffic and the unsightly corner with its wrecked machines, broken glass and blood-stained street.

The next morning as I went to work and came again to the scene of the accident, I slowed down to look for evidences of the tragedy. The street was cleared and clean. The corner looked again as it always had. It gave little or no evidence of the harrowing event of the night before.

That experience, it seems to me, is like the present world tragedy. We are having an international wreck, with its terrible loss of property, its suffering, trials and death. One day, again, the wreckage will be cleared away, the human suffering will cease, and the world will return to its former likeness just as did the street corner following the automobile crack-up. Let's help clear the wreck away, but let us not forget also that one day again our job will not have to do with this temporary arduous work.

During the period of the present crises we are confronted with a number

of problems and with them in mind we must proceed on a sound basis. One of the problems is the hazard of another post-war inflation, which can be avoided if our nation's defense production program can be carried on in an orderly way without greatly disturbing our scale of living. During the World War the greatest expansion of activity and the most rapid inflation of prices did not take place within the war period, but in 1919 and 1920. This was largely the result of the pent-up demands of a still growing and vigorous country whose expansion had been retarded by the war emergency.

We should challenge any program that would contemplate a curtailment of commercial goods, because with a greatly increased purchasing power, a shortage of goods to absorb the contents of fatter pay envelopes may, in turn, lead to the deadliest price inflation. The production of commercial goods must be sustained or perhaps increased, and at the same time full emphasis must be given to the rearmament emergency program. In World War No. 1 electric equipment was made available permitting our customers to carry on in essential domestic service.

Another problem is tax revenues, and with this our industry is not unfamiliar. Unless business volume is sustained or expanded on a sound basis, there is no other means of building up a national income sufficient to produce the desired taxes. As an index to the electric utilities' justifiable concern about the trend of taxes, I would like to remind you that our industry paid taxes last year in excess of $400,000,000, representing 17½ per cent of our gross revenues. In contrast to this, in 1917 the total taxes paid by the electric utilities amounted to less than $30,000,000, or 4.4 per cent of the gross.

A third issue of concern to us during this period is the maintenance of the American standard of living. Over 25,000,000 families in this country are today benefiting from a higher standard of living because of electric service. At the time of the previous World War the number of domestic customers was less than 7,000,000, and the national average kwhr sales for residential use was 268 kwhr in contrast to 952 kwhr for 1940.

One reason for this extensive use of electricity by the average American family is the progressive reduction in the price of domestic electricity which reached an all-time low in 1940. Today the national domestic average is only 3.81 cents per kwhr as compared with 7.45 cents two decades ago.

A further evidence of the influence of electricity on our American standards of living is the high degree of acceptance of electric appliances. The sale of electric appliances totaled $800,000,000 last year which was slightly greater than the previous banner year, 1937. This volume of business represented an expenditure of $32 for electrical equipment by the average American family. A survey made by the government in 1917 does not indicate that you or I or the head of any other American family was spending more than a few dollars of our income on such things. Today among families embracing all wage earning classifications, the sale of electrical appliances has progressed to the point where now eight families out of every hundred are buying electric refrigerators, and six out of every hundred are buying electric vacuum cleaners, washing machines and similar appliances. This trend implies a highly developed and yet rapidly expanding field for the further use of electricity in the average American home.

A fourth problem during the national defense period is that of increasing our own industrial efficiency to fortify our country for post-war competition. The extent to which private industry is enabled to exert ingenuity and resourcefulness in rehabilitating and modernizing of plant facilities will govern the degree to which production costs may be reduced and maximum efficiency obtained. High wage rates can be sustained only by increased productivity. The transition from war to peace should be accomplished with less shock than was the case in 1918. Nevertheless, when the war is over we can anticipate a period of the most active competition from foreign countries. For this reason industry must bring its plant equipment to the highest degree of efficiency if we are to minimize the danger of lower wages, longer hours and lower profits. This presents a basic challenge to our social and economic order. The purchasing power of the people must be maintained to preserve the present high American standard of living.

If the electrical industry is to prepare now for the post-war period, it must face several important tasks. I should like to point out some of these that effect, to some degree, all of our commercial, industrial, agricultural and domestic business development work.

First is the opportunity, as well as the responsibility, we have to work with military and industrial defense projects to insure the most effective uses of electricity. Advanced industrial applications of electricity, the effectiveness of good interior lighting on quality production, the use of electrical apparatus to safeguard against sabotage, and numerous other applications of electricity to streamline our defense program, may not be fully utilized without persevering work by our representatives. Some of the newer uses for electricity which offer real assistance to industry are found in such developments as infra-red heating, fluorescent lighting and improvements in heat treating. In shipbuilding, for example, electric welding has speeded up construction and expanded the productive capacity of manpower nearly six times over the former riveted construction.

Second, we need now to plan and establish an aggressive program of selective selling to domestic customers. Thus we may succeed in keeping electric living in the foreground of the customer's mind and maintain an essential contact for better public relations.

Third is the matter of service: its quality and cost. Our industry has been justly proud of the service it renders and fully cognizant of its bearing on customer good will. Good service should be recognized as a business-building asset. It has a direct bearing on the trend of kwhr usage. It also is an asset in retaining existing business that might be threatened by competition. Satisfactory performance of equipment now in use as a result of good service will influence future sales and market development programs. However, service policies should be appraised today to determine whether the service rendered beyond the meter is on a sound basis. It has been said that as a result of sales work done during the pioneering days, service practices were established that may not be warranted by conditions existing in some localities. Because of increased dealer activity, the service that is rendered by any utility should be available to all customers without discrimination. One step, therefore, in preparing for the post-war period should be that of reviewing our service policies to make certain that a sound service program is maintained for the good of the industry.

Fourth is the need for reliable data from which to compile pertinent market and sales development facts, so that we may intelligently anticipate post-war conditions. Information will be required to determine customer acceptance and buying preferences, and the extent and nature of activities by dealer allies. Not only should we continue to compile data heretofore used, but special analyses and market and sales research studies should be organized to develop facts about conditions that may change rapidly within the next few years. The future job of building the most desirable loads for the electric utilities will have to deal with enlarged production facilities, new industries, new uses for electricity, realignment and expansion of buying power, and changed conditions in many communities that may have been vastly enlarged. The use of this information will enable us to capitalize upon definite opportunities in the post-war market.

Fifth, sales policies and sales programs should now be pointed toward effectively utilizing dealer allies in the post-war market development activities. The increasing importance of dealer merchandising is significant. A study of the proportion of electric home appliance sales by utilities in relation to sales by dealers discloses that nearly ten years ago utility companies did approximately one-fourth of the total electric home appliance business. By 1938, the proportion of sales by utilities had decreased to 16 per cent, in 1939 to 13 per cent and in 1940 to 12 per cent. The trend, judging from these facts, is definite and quite logical in view of the public acceptance of most electrical appliances. The situation today is vastly different from that which existed at the conclusion of the World War in 1918. We were then confronted with a competitive job and with little or no public acceptance for the numerous electric appliances now commonplace in the average American home. The participation of dealers can be geared to our industry if we give more attention to the fundamentals governing dealer merchandising activities.

Sixth is the necessity of maintaining an organized and united industry effort for sustained constructive selling. This is important if we are to have continued and sound programs of market development. The several promotional programs initiated during the past few years have had a major bearing upon the trend of equipment sales and the enlistment of dealer activity. These include the Modern Kitchen Bureau, the Better Light-Better Sight movement, the Electric Water Systems Council, the Commercial Electric Cooking Councils, the Adequate Wiring program and others. These programs have been supported by all branches of the electric industry and other interested agencies and have proved a constructive stimulus. Programs of united industry effort should be continued during the present period, with plans for possible intensification subsequently.

Seventh, the training of utility employees and the sales force for the important job to come will require a continuation of programs initiated in recent years, plus the development of training projects adapted to the post-war era as we anticipate it. We must retain the interest and activity of employees in business building. Sales training programs for dealers and their personnel are of equal importance.

Eighth—last but not least, it behooves us to resist aggressively any attempts to undermine the work of private electric utilities. We must continue to repel slander and uphold the principle of private enterprise that has made America.

I have refrained from specifically discussing the various sales committee programs of the E. E. I. that have been so important thus far and which will be of increasing importance during the period of our national defense activity. And it is only through this organized group action under the leadership of the Edison Electric Institute that we can effectively meet the post-war period and its problems. I have only attempted to indicate some fundamental aspects of the present situation as it affects our immediate activities and the type of planning that we would do for the post-war period.

In conclusion, let me add that by prosecuting a program as outlined we shall thereby contribute to the national morale during this crisis by upholding a higher standard of living through the greater use of electricity.

Judges for Prize Awards Are Announced

JUDGES for the 1941 entries in the several Prize Awards contests sponsored by the Edison Electric Institute have been announced by H. P. Liversidge, Chairman of the Prize Awards Committee. Final judging of all entries for the 1941 contests will be completed before the June Convention and the winners announced at the Convention by Mr. Liversidge. Names of those who will serve as judges follow:

CHARLES A. COFFIN AWARD

KARL COMPTON TAYLOR, Massachusetts Institute of Technology, Boston, Mass.
H. P. LIVERSIDGE, Philadelphia Electric Co., Philadelphia, Pa.
C. W. KELLOGG, Edison Electric Institute New York, N. Y.

AUGUSTUS D. CURTIS AWARD

A. D. CAMERON, Illuminating Engineering Society, New York, N. Y.
J. F. O'BRIEN, John B. Pierce Foundation, New York, N. Y.
O. FRED ROST, *Wholesaler's Salesmen*, New York, N. Y.

B. C. FORBES AWARD

G. W. VAN DERZEE, Wisconsin Electric Power Co., Milwaukee, Wis.
T. D. CROCKER, Northern States Power Co., Minneapolis, Minn.
ROY PAGE, Nebraska Power Co., Omaha, Neb.

GEORGE A. HUGHES AWARD

HENRY G. DOOLEY, *Electrical World*, New York, N. Y.
ARTHUR P. HIROSE, *McCall's Magazine*, New York, N. Y.
W. J. DAILY, Roy S. Durstine, Inc., New York, N. Y.

R. B. MARSHALL AWARD

C. W. CLEWORTH, *Electrical Publications*, New York, N. Y.
JAMES H. NELSON, Ralph H. Jones Co., New York, N. Y.
L. E. MOFFATT, *Electrical Merchandising*, New York, N. Y.

THOMAS W. MARTIN AWARD

GEORGE W. KABLE, *Electricity on the Farm*, New York, N. Y.
W. C. KRUEGER, New Jersey State Agricultural College, New Brunswick, N. J.
WM. M. MUMM, Mumm, Romer, Robbins & Pearson, Inc., Columbus, Ohio.

CLAUDE L. MATTHEWS AWARD

A. E. SILVER, Ebasco Services, Inc., New York, N. Y.
W. R. SMITH, Public Service Electric & Gas Co., Newark, N. J.
N. M. ARGABRITE, American Gas & Electric Service Co., New York, N. Y.

LAURA McCALL AWARD

MISS ELOISE DAVIDSON, Herald-Tribune Institute, New York, N. Y.
MRS. HELEN JUDY BOND, Columbia University, New York, N. Y.
DAVID M. DEBARD, Stone & Webster Service Corp., New York, N. Y.

JAMES H. McGRAW AWARD

R. N. CONWELL, Public Service Electric & Gas Co., Newark, N. J.
F. R. INNES, *Electrical World*, New York, N. Y.
W. A. SHOUDY, Orrok, Myers and Shoudy, New York, N. Y.

March 1 was the closing date for entries in the Forbes, McGraw, Marshall and Matthews Awards and April 1 for the Coffin, Curtis, Hughes, Martin and McCall Awards.

Selling Electricity in April, 1941—and Later

By H. P. Liversidge
President, Philadelphia Electric Company

An address before the Eighth Annual Sales Conference, Edison Electric Institute, Chicago, March 31-April 3

EVER since the collapse of France, events in this country have conspired to turn the spotlight away from vital domestic problems, and to focus it unpityingly on the war in the Eastern hemisphere. There, totalitarian powers are contending against democracies, and the danger, if not the actuality, now is that the United States itself may be drawn into the combat on the side of the latter.

Naturally a war of such magnitude is not without its repercussions on American business; and economists and executives have been trying to gage its ultimate effect. Although it may require quite a few months before our own preparedness program is in full swing, American industries are already experiencing the stimulating influence of war orders.

The Federal Reserve System's industrial production figure for January reached 139, which is above anything heretofore recorded. Steel, airplane and shipbuilding industries are working at capacity, and the activities of other enterprises engaged in the production of materials for national defense are showing a steady and sharp advance.

Where it will all end is unpredictable. Obviously, for a time, war will bring increasing activity, higher rates of production, and in some instances possible larger profits; but it can hardly result in any extraordinary prosperity of a lasting nature. Nor can the experiences of the World War serve as a dependable guide in the present crisis; because superimposed on the war orders of that time came the phenomenal expansion of the automotive and road building industries, and piled on that, radio broadcasting and the manufacture of radio receiving sets. Under the impetus of these latter industries, the people of the United States lived bounteously and were able to ward off depression until the record-breaking financial panic of 1929.

However, the World War did act as a remarkable tonic. As a matter of fact many generating systems were frequent-

MR. LIVERSIDGE

ly operated to the limit of their capacity in order to cope with the influx of new business. And the interconnection of stations into vast networks sprang into being. It was not long before the industry surpassed in magnitude of investment all other public utility industries and was numbered among the nation's greatest enterprises. It is significant to note that the extensive residential business acquired during this period stuck, and the added revenue derived from it enabled many hard-pressed utilities to subsist until their industrial loads again began to take hold.

The question now is: "Will history repeat itself?" The answer is, as I view it, "Only partially." Certainly the nation's staggering and ever-mounting public debt with its concomitant tax burden will serve as a serious deterrent to any era of pronounced prosperity. Manufacturers, of course, will clamor for more and more power, and the industry will have to provide enough for all who ask. That is its bounden duty.

What I think you gentlemen would like to know, however, is: "Shall our sales efforts in 1941 be intensified?" As the man in the street earns more, and with no one in high places apparently admonishing him to save any of it, ought not he be induced to invest in electrical appliances which will contribute to the pleasure and comfort of himself and family? Obviously the answer with certain reservations, is "yes!" Yet, I have heard—not frequently, it is true—expressions to the effect that perhaps during this critical period of national emergency the public interest and our full obligation in this crisis might best be served through substantial diminution of sales effort. Well, I can hardly subscribe to this as a broad general policy, although in times such as these it is surely the part of wisdom to look before one leaps, and to think before we act.

All one may ask is that we take to heart some of the lessons of the World War and bear in mind what has happened since. Over-extended credits and long-term contracts in any war emergency should be avoided, and if manufacturers are permitted to amortize the cost of their munition-making facilities out of earnings in five years, they certainly should include in those facilities the distribution and transforming equipment installed especially to meet these temporary requirements.

It is a matter of common knowledge that the rates for electricity have been progressively reduced during the past 20 years. The industry has made available to large and small users of its services alike, the benefits of technological progress and increased productivity. What is not so well known or appreciated, however, is that in addition to the recent savings which have been passed on to the customer due to these technological advances, there have been enormous economies realized through refunding and refinancing operations which have likewise benefited the consumer public.

We are challenged, therefore, with this proposition: With operating costs mounting, due to rapidly-increasing taxes, higher wages, and advancing costs of equipment and raw materials, and with little probability of obtaining cheaper money or more efficient generat-

ing facilities, can enough added business be obtained to keep the rates for service where they are now? Or must we admit that we have reached a point of diminishing returns, and, heaven forbid —apply for rate increases? Yet let me remind you that this very thing actually occurred in the World War.

The solution is in your hands, gentlemen, and I for one, am optimistic enough to believe you will meet the challenge. But enough of generalization—and now for a few specific thoughts:

Electric public utilities are wont to divide their business into three major classifications: (1) Industrial; (2) Commercial, and (3) Residential. It is the first of these that will cause the industry most concern for in that classification will fall the bulk of the business created by the war and national defense programs. It is natural for one to be carried away with the volume of this business; but what is most important for us to keep firmly in mind is its permanency. If, as a result of the upswing, more and more savings find their way into durable goods, new investment, new ventures and vigorous new enterprise, improvement will be converted into recovery and there is promise that the business will not be wholly lost when the war ends.

Most industrial customers have relied on public utility service in the past and naturally will depend on the same source to carry any increased load arising from war orders. How large this volume will be is beyond the control of the public utilities, and its permanency will depend on the nature of the business and the duration of the emergency. Therefore, the out-of-pocket expense necessary to care for this business must be scrutinized closely if the industry is not to lose its capital on schemes of questionable stability. In considering new ventures which temporarily may seem desirable, but which careful analysis will disclose to be foredoomed to failure, intelligent foresight and self-restraint are called for. On the other hand, the industry must ever be mindful of the needs of national defense, and under no circumstances permit anything to delay or handicap the preparedness program. That has been our record of the past—it will be our record for the future.

War load will be acquired by the industry in one of three ways: through the expansion of the facilities of an existing customer whose business is stable in normal times; through the rehabilitation of an unoccupied plant, or by the erection of a new factory for the purpose of producing material for war and defense.

The first two cases are unlikely to impose any unsurmountable problems. Existing customers usually have some spare capacity in their service connections and the war's aftermath will find them still doing business. But the customer operating an isolated plant *may* find that his demand for additional power exceeds his installed capacity. *His* most expedient move, therefore, should be to purchase the additional power. This in itself may prove an opportunity to introduce our service and the ultimate result might logically be the abandonment of his own power plant.

Unoccupied factories are usually near available lines or may in reality possess service connections. The hazard therefore narrows down to new plants offering high and possibly temporary demands for energy. The enterprise may be as sound as a dollar or it may be a gigantic and economically unproven venture built for quick and speculative profits. Toward such situations, the attitude of the industry should not be one of pessimism but of wholesome realism.

Take the case of my own company, for example. Thus far the Philadelphia industrial area is in receipt of war orders aggregating almost one and a half billion dollars. More than a billion of this will go to the shipbuilding industry and as a consequence one of these plants will be entirely rehabilitated while another plant will be greatly enlarged. Now shipbuilding is a productive industry and the facilities of our great shipyards should be employed to capacity long after the conflict abroad has ended. The risk involved in supplying electrical energy to these customers is small, and there can be little question regarding the desirability of such business.

Since the volume of these war industry sales for the most part is uncontrollable, salesmen will be compelled to devote a large part of their time to problems resulting from such expansion. It seems logical, therefore, to suggest that such promotional work as is engaged in should be directed toward the maintenance of standards in the use of electric service which will be helpful when the emergency is over, and toward the development of new applications which lend themselves to selling when the going may not be so good. For example—if the intrinsic value of high intensity lighting can be fixed in customers' minds during this period of prosperity, then any great curtailment in the use of light on the score of economy, is unlikely when conditions return to normal. The same holds true of air conditioning. Customers sold on the comfort or competitive advantage of air conditioning will certainly continue to use it after the war.

Infra-red heating and drying illustrate applications in the low temperature heating field which has been, up to now, largely closed to electricity. The apparatus is relatively cheap to buy, install and operate, and frequently does a better, faster, and therefore, less expensive job. Much development work is necessary, however, before it will be ready for intensive, organized selling, and this should be actively undertaken if infrared heating is to become a valuable sales asset in the immediate future.

To summarize the industrial outlook, I believe that electric utilities will be well advised to handle promptly all temporary demands for defense electricity at minimum capital investment; and to direct actual selling, promotional, and development work solely to those uses of electricity that will tend to be permanent additions to load and which will help cushion the shock of readjustment after the crisis is past.

Commercial Sales

In commercial sales work the problem is somewhat different. As the payrolls of industry expand, the individual worker will have money to spend, and this increase in purchasing power will favorably affect the business of commercial establishments. Of course there will be a time lag; but within a very few months or, perhaps, even weeks from now, commercial customers will have materially increased resources so that normal promotional efforts should be effective in diverting a share of this new purchasing power to investment in equipment for additional electric service.

Here again it must be kept in mind that, after the war, purchasing power, which was increased by war demand, may be considerably reduced. Therefore, commercial salesmen should promote those applications which are most likely to be employed in normal or even subnormal operations. As in the case of industrial sales, higher lighting intensities, and applications of electricity unlikely to be curtailed afterwards as a matter of economy, should be the goal sought. Furthermore, commercial salesmen should explore any and all possible

applications which might be exploited when recession sets in.

Another matter which should be given deliberate consideration in any contemplation of the war's aftermath, is the reappraisal of our situation with respect to adequacy of personnel, of demonstration equipment, of educational work with salesmen and others, of cooperation with manufacturers, distributors and dealers, and of advertising. These are tools which help to produce sales, and we should make sure that when peace comes, they are sharp and effective.

Now I want to turn to one of the most important as well as most difficult phases of our entire business—that of residential sales.

Residential Sales

It should be apparent that the continued cultivation of the domestic market will not affect the defense program adversely, since only 21.3 per cent of the kilowatthours generated in the United States are used for domestic purposes. In some industrial areas this percentage is even lower—in Philadelphia, for example, the residential consumption is only 15 per cent of the total output. By no stretch of the imagination, therefore, can the use of electricity in the home impair the defense program.

As a matter of fact, the tremendous increase in industrial loads will tend to reduce still lower the percentage of kilowatthours used for domestic purposes, and will unbalance the relationships existing between the various classes of business, which have always been considered important from an economic point of view. The continued promotion of the domestic market seems to be the only means at hand to help maintain the proper balance between residential electricity sales and those in other classes.

When such a course of action is scrutinized to determine whether it is in the public interest, I believe it must be agreed that perhaps this is an excellent opportunity to be of real service to the underprivileged 30 or 40 per cent of the customers in the lower income brackets. The standards of living of these people are still too low because primarily their acquisition of labor-saving devices has been negligible and largely because they have been unable to make the necessary capital expenditures to purchase them.

In many utility companies, considerable work has been done with the lower income customers. Investigation indicates that even if most of them were supplied with free electricity, they would be unable to take advantage of such an opportunity because of their inability to purchase the utilization equipment. All of us know that if these families had the equipment, they could well afford the 7 or 8 cents per month required to operate a washer, or because of the economy feature, even the 60 or 80 cents per month required to operate a refrigerator. Because this same condition is true with other electrical devices, the continued promotion of the domestic market now presents a rare opportunity, if not an obligation, to render a real service to these customers. Now that these customers are gainfully employed, they should be encouraged to invest their earnings in permanent improvements in their homes, such as labor saving devices, thus enabling them to enjoy better living conditions for many years to come. In brief, increased domestic sales are a result of increased appliance sales; and the time to secure these is when purchasing power is high. People don't spend money for unnecessary domestic equipment in depression periods.

Again, to pursue such a program will help to supplement industrial production now engaged in defense work. Experience over many years has taught that should there be curtailment or stoppage of such residential promotional activities, the market for domestic devices would be retarded seriously, and might even decrease to the point of inflicting hardships on those employed in the manufacture of domestic equipment, if during this period their facilities could not be wholly absorbed by defense work.

Furthermore, experience also teaches that the cessation of promotional activities so affects the acceptance and consequent demand for electrical devices that when, in the post-war period, it becomes necessary to obtain volume sales, the time to re-establish the necessary degree of public acceptance and demand will be so great that it may contribute heavily to the unemployment that doubtless will be created by the termination of defense production. This consideration alone is so important from a social and economic standpoint that continued promotion of the domestic market seems most desirable. That the post-war problem is a grave one is shown by the fact that the National Administration, even now, is considering an expenditure approximating $6,000,000,000 to be made after the present emergency is over, in order to help absorb industrial labor which of necessity will be released from various defense industries.

Insofar as the welfare of the electric utilities is concerned, it is important that residential sales plans are laid now for this post-war time. If the electric utilities are caught in a position where their industrial load decreases rapidly and they have not provided the necessary promotion so that the domestic load may cushion the impact, they may well find themselves not only in financial difficulty but also in a condition where they will be unable to contribute what they might otherwise have been able to do to the national economy. It would serve no useful purpose, either social or economic, for them to place themselves in such an unsound position as to be unable to meet these obligations.

Such an eventuality is far from a pleasing picture. And yet, just as surely as I stand before you, just so surely will you face *somewhere* in the future the stark realities of another grave depression. Lay your plans now to meet that storm. If by some stroke of good fortune it doesn't come you'll be that much ahead. If it happens you'll have a head start. Win or lose—you'll at least have the satisfaction of doing your best. The world can ask no more of any man.

New Mailing Pieces Released by Commercial Cooking Council

TWO new mailing pieces have been prepared by the Commercial Electric Cooking Council, and are ready to presell prospects on all types of electric cooking equipment for restaurants, soda fountains, lunch counters, etc.

Entitled "Does the Menu Ghost Haunt You?" and "Here's a Tip for Progressive Restaurant Operators," the folders effectively use two colors and action photographs of deep fat fryers, coffee makers, grills and other load building equipment in use. Hard-hitting copy plays up the cleanliness, speed, dependability and simplicity of electric cooking; shows how to provide a more varied menu, increase the average check and promote customer confidence by preparing food before their eyes.

Both mailing pieces drive home the profit building potential of electric cooking equipment. No individual brands of appliances are mentioned, in order to make the folders available to every utility.

Write the Commercial Electric Cooking Council, 420 Lexington Ave., New York, for specimen copies and prices.

Utilities Sales Activities Is Best Answer to Power Shortage Question

By C. W. Kellogg
President, Edison Electric Institute

Excerpts from a talk before the Eighth Annual Sales Conference, Edison Electric Institute, Chicago, March 31 - April 3

IT would be a failure to face facts not to realize that basically this Conference is on the defensive. However, there is no harm in being on the defensive if one's defenses are strong enough to resist attack and that in my opinion is how we are circumstanced. Let me elaborate.

This is a Sales Conference. Sales are supposed to dispose of goods. Our goods are electric power. Yet you can hardly pick up a paper these days without hearing a wail from some one about a power shortage usually (be it admitted) in the future. If there is a shortage of power for defense purposes, why in Heaven's name should we be holding a conference whose only effect if successful would logically be to produce more power shortage. This reasoning is what may be said to put this conference on the defensive. What have we to say in reply? There are several things we can say and these I believe add up to a completely adequate defense of our conference.

In the first place, actual selling of additional power is not by any means all that selling means to the utilities. With us the selling process includes also to a large extent keeping our service sold. In these days of hectic industrial development for defense our power salesmen in helping our customers, both present and prospective, with their increased power demands, are working directly for the furtherance of the Defense Program.

In the case of commercial business the modern trend in fluorescent lighting is a problem of getting more light for the same amount of power. Without stopping to discuss the reasons for it, the greatly expanded industrial payrolls, resulting from the defense effort are bound to increase the consumption of goods; and the preservation of our American competitive system means that every method of competition (of which one of the most powerful is better lighting) should be kept available to our merchandisers.

The argument for extending and improving home service is even stronger. Our Government through the Defense Commission—not to mention other departments—is laying the greatest stress (and that very appropriately) on the importance, as a defense measure, of keeping up the morale of the people through attention to home life and home surroundings. This is not mere sentimental twaddle, but a real factor of great power and importance.

Agreeable conditions in the home mean better and more efficient work in the munitions factories. Labor-saving in the home means that much more energy for defense production where the worker has household tasks to be performed after working hours. Extra shifts add to the difficulty of conserving food and preparing it at unusual hours. The extensive reemployment, incident to the defense effort industrially, has brought, and will bring, into the market for the great electric labor-savers and efficiency-improvers in the homes of millions of people who never before could afford them. I believe all this makes a tremendous field for electric utility sales effort on the home front that will not only keep our sales forces busy on household electric development but will be a definite tangible help to the efficiency of the whole national defense program.

We must never forget that the debacle of the German military forces in the last war was accelerated greatly by the economic distress at home.

From a negative viewpoint, the amount of electricity involved in home use development is trifling compared to the industrial power requirements. This is partly due to the fact that so much of the home electrical development is a mere improvement in load factor rather than new peak demand, although Constantine Bary's studies throw considerable doubt on this conclusion. But entirely aside from load factor, the relative amounts of power involved are so small. The power required to operate one good sized electric furnace plant would be about the same as the home requirements of 100,000 workers taking 0.4 kw as the average coincident residence demand and four to the average family.

Another reason for electric sales activity in the home sector at this time, which may at first glance seem purely selfish, is not entirely so. I refer to the needs of a post-war world. The President has many times stressed the importance (which we must all realize) of providing cushions for the sudden transition from defense or war status to peace-time. For the utilities this means keeping as solvent as possible; for impoverished utilities would mean inefficient service. The sudden change (when it comes) from war to peace, will find the utilities possessed of millions of kilowatts which are no longer earning anything, but costs on which, in the shape of interest, depreciation and taxes, will go persistently on. When this drab time comes, the greatest off-set to it will be the residential load; and if this is not built up now, it will not be on hand as a shock-absorber when, in future, it becomes badly needed for that purpose.

Finally, there is surely nothing inherently wrong or unpatriotic about the theory of "Business as Usual" during the defense period. On the contrary, as an ideal it is most desirable. The fact that it has had to be abandoned in the warring countries of Europe, Asia and Africa is not a virtue in itself that makes it sinful, so to speak, to favor it in this country. So long, therefore, as our great area and resources and freedom from invasion permit us to continue in a relatively way to keep business as usual in our land, the better in every way.

I believe the whole "Business as Usual" problem can very well be left to take care of itself. When conditions of war or defense become such as to interfere with normal business, they will proceed to do so with a relentlessness which we shall be powerless either to increase or diminish.

Electrical Living in Defense and Other Federal Housing Projects

By B. W. Clark

Vice-President, Westinghouse Electric & Manufacturing Company

An address before the Eighth Annual Sales Conference, Edison Electric Institute, Chicago, March 31-April 3

WE have been spared, to now, the horrors of war in this, our United States, but more and more we feel its presence and fear its results.

Our country has become a great arsenal, a vast factory for making the instruments of war, a training camp for more than a million and a half of young men preparing for the struggle that we pray will never come.

The dislocations of our lives and plans are not what they will be if we actually get into war, but the terrific war effort, combined with the effort to keep our peace-time industries going seems to dwarf the 1915-1919 activity to pigmy size.

The situation has come upon us so suddenly as to catch some of us unawares. It has built up, however, as sentiment in favor of the democracies has built up as we realized their perilous position, and we have become determined to do something about it.

There is one industry that deserves the place of honor in the industries. That is the power industry. Eighty-seven per cent privately owned, the utilities stand today with enough (and reserve) capacity and with contracted equipment to keep it so, to care for the needs of the defense industry, peace-time industry and the needs of the home.

In addition, the networks, conceived and built by holding companies, enable us to use the power where it is needed and provide a marvelous insurance against shut-down for any cause.

You and we are steeped in figures telling of the meteoric rise of shipbuilding, ordnance, airplane and other defense industries and of the general rapid increase in the industries which feed them with materials and parts.

This rapid expansion of existing manufacturing facilities—the erection of great numbers of completely new projects for the production and servicing of war equipment—supplies—and training

MR. CLARK

facilities have, however, created many major problems. Among these is an acute housing problem. This is due largely to the necessary re-location of large groups of our population. Economical housing of Army, Navy and civilians is vital to the mechanized, streamlined World War II.

A shortage of approximately 1,500,000 housing units in the United States at the close of 1940 to meet normal housing conditions only adds to the complications. Sound, long-range planning is essential in facing not only the immediate conditions, but the equally important problems in this field of our existence of tomorrow. Good housing is the backbone of the *American Home*—the Heart of American Democracy.

Much has been written—a great deal said—and some progress made toward meeting immediate demands. Much, however, remains to be done to even approach minimum requirements on a sound basis for the Army, Navy, defense civilians, plus normal civilian requirements due to population growth, plus replacements for obsolescence and fire losses.

The total requirements must be analyzed in terms of the requirements of each major group if you are to first be in a position to fulfill your part of this huge task, and second, minimize the many pitfalls that accompany rapid expansion in any field under the pressure of war conditions.

War Department's Defense Construction Program

The War Department's Quartermaster Corps has construction appropriations of approximately $950,000,000. This covers buildings, utilities and appurtenances (as sanitary systems, highways, etc.)

Total number of projects	190
Total number of individual buildings	45,000
Total number of men program will care for by mid-summer	1,418,000
Total number of cantonments ...	46

Many of the cantonments provide accommodations for a "square division" of 18,000 men—some will accommodate two such divisions.

Navy Department's Defense Construction Program

Total construction contracts as of March 1, 1940—$1,103,000,000. These contracts cover ship building and repair facilities—air bases—manufacturing and ordnance buildings—hospitals—barracks—civilian housing on Naval property, utilities, etc. The main classifications are:

1. Shore facilities for ship building and repairs Naval Land Air Bases	$594,000,000
2. Ordnance and manufacturing facilities	375,000,000
3. Hospitals	9,000,000
4. Housing (barracks) single Naval personnel	72,000,000
5. Miscellaneous housing, stores, schools, recreation, etc.	8,500,000

These are the Government building programs you see so much about. They will use vast quantities of electric power—in some cases generated within the project—principally bought from utili-

ties as primary power. The home appliance business enters this field to a very small extent, because things will be done on a mass basis.

Family housing, for the most part planned as permanent, provides another very large building prospect, and this market is the one in which your appliance promotional departments are most interested.

Approximately 545,000 (non-farm) housing units were erected in this country during 1940.

Housing analysts predict a total of 625,000 family units will be erected in 1941. These are divided into:

480,000 single family residences,
30,000 two-family residences,
55,000 multiple family (apart-
60,000 defense housing family units.

Many of the first three classifications will be used for housing defense families. The 60,000 units are the estimated number of housing units of defense value only. These will be of little value from a peace time point of view after the emergency has passed.

Two important definite trends are apparent from an analysis of housing data. One, the percentage of *single houses* to the total number has increased from 56 per cent in 1927 to 80 per cent in 1940. Two, the greatest housing unit increases are occurring in cities and towns of less than 50,000 population which increased 29 per cent in 1940 over 1939, while cities of more than 50,000 increased only 7.7 per cent during the same period. A study of the latter trend over a longer period indicates that this is a very definite trend that will continue during the next decade.

It is well that you fully appraise other important factors in establishing long housing trend policies and in estimating their effect on your business.

Fundamental Factors on Housing Cycles

Previous housing cycles of building activity have followed a rather definite curve, with peaks occurring at approximately 18-year intervals during the last 150 years. It should be remembered that the last century and a half has been a period of rapid population growth of young people. Analysis of today's population trends indicates the following:

A. The rate of our population increase is slowing up.

B. The percentage of the population between the ages of 25 to 45 is increasing. From 1930 to 1940 our continental population increased from 122,775,046 to 131,669,275, or approximately 7%. From 1940 to 1950, statisticians anticipate only a 6% increase in population.

However, it is estimated that the number of persons in the age group from 25 to 45 years will increase 12% during the next decade. It is this age group that buys homes. This increase in the number of persons of the "House Buying Age" will materially increase the normal demand for housing units.

The application of a normal housing cycle of 18 years, with the last peak in 1926, would mean a continued upswing of housing construction until 1945. Whether this increase in population of "House Buying Age" will extend the cycle by one, two or more years or will increase the height of the peak cannot be gauged at this time. Total housing requirements, however, should increase and housing construction should continue to climb for the next three to five years. Much depends on the war, its length and its outcome.

But what are some of the immediate effects and problems on your business and ours from this housing activity?

1. Increased housing in 1941 will increase your kwhr consumption by approximately 600,000,000 kwhr annually.

2. The approximate sales of electrical merchandise and supplies is anticipated:

Wiring and wiring supplies at $40	$25,000,000
375,000 Refrigerators, 60%, at $125 (app.)	37,000,000
65,000 Ranges at $100	6,500,000
Water Heaters, Dishwashers, Washers, Ironers, etc.	3,500,000

Refrigeration in the new housing is estimated to be 85 per cent electric; ranges, 15 per cent electric, much depending on location. Bottled gas is working its way into many communities, and is a thing to be closely watched.

Surely your hands will be full for the period covered by the expansion program. It is your business and ours to see that "electrical living" continues to be the criterion of good living. Some day a lot of kilowatts which today are urgently needed to be used, will as urgently need to be *sold*. What we do now, in caring for demand, and in increasing the desirability of electricity in the home, will count heavily in the future.

It is going to be difficult, surrounded by all the *"musts,"* to do our jobs. We are, after all, in what is designated as a peace-time business, and we must expect loss of important personnel, lack of present interest in home load, great difficulty in getting materials, to handicap the home appliance effort. But we've got to overcome the handicaps.

In producing household appliances, the manufacturers have struggled against every kind of handicap, and I think that an outline of some of these difficulties, particularly in regard to materials that are scarce and that are required by the strictly defense industries, will be interesting to you.

Perhaps the most critical material that we are having to deal with is nickel, which is required in terrific quantities for armor-plate, guns and machinery, and the peace-time industries have, of necessity, to get along with a percentage of their real needs.

The allotment of nickel to the electrical appliance business is 50 per cent of the 1940 requirement, which, interpreted in terms of 1941 production, amounts to one-third of the requirement on original basis of design.

The use of nickel in the appliance business extends to a very great many items, and here are some instances:

All chrome-plating must have a nickel base, so that the requirement for nickel anodes is very great and there is no substitution.

Nickel is required for stainless steel sheets which have been used for the liners of beverage coolers, for refrigerator evaporators and for the tops of water coolers, etc.

Nickel has also been required in the manufacture of range units; the tubing having been made of a steel chromium nickel alloy using 18% of chromium and 8% of nickel.

Nickel is one of the prime and really necessary requirements for the production of nichrome wire, which is the real basis of our heating units. There seems to be no substitute.

The effort to re-design to avoid the use of nickel is resulting in the use of steel with a high chrome content to make stainless steel. Such steel is not as easily worked as steel with a nickel content, and its use has required the re-design of parts and of tools and new processing in order that it may be handled.

As an instance, the effort to make tubing for range units all of straight chrome results in the splitting of the tubing in the bending process and has made it necessary to anneal between operations and to revise the welding equipment.

In the case of one item in our own production, a stainless steel pan which was originally made with nickel steel—that item, to manufacture with straight chrome steel, necessitated the design and manufacture of a complete new set of tools, using three operations in the shaping, because the dies which would handle the nickel steel in one operation, will tear the straight chrome steel to pieces.

About two months ago, we thought that the aluminum situation was going to be in excellent shape. A vast program of expansion was under way, and schedules which were out appeared entirely possible to meet and still provide enough capacity for the needs of peace industries. Suddenly, requisitions for aluminum started coming in at a rate almost double the Government estimates which had been seen before, and a shortage de-

veloped almost over night. Today all aluminum, even scrap, is regulated by O.P.M. The percentage that the appliance manufacturers will receive under present schedules is 30 per cent of the 1940 requirement. This is about 20 per cent of the 1941 requirement.

You can imagine that this sudden and unexpected upset in the aluminum situation has caused a terrific scramble in industry to provide substitutions which will enable production to go on regardless.

In the first place, aluminum ice tray equipment has, under Government order, been cut more than in half, and molds have had to be ordered to produce rubber tray equipment and other substitute equipment to make up the deficit. The result is that the manufacturers are now forced to ship refrigerators with partial ice tray equipment to be made up when the substitute trays are available. As you know, it takes time to make molds also.

Outside of the tray equipment, the Westinghouse program of production on refrigerators alone, saves 226,000 pounds of aluminum for the balance of the year 1941. It is equivalent to the aluminum requirement for twenty-two bombers.

Here are the changes which have had to be made in order to effect this saving:

The door of the evaporator was aluminum. It is being replaced by a door of enameled steel.

Shelf slides were aluminum. They have been replaced with stainless steel.

The handles of the Meat Keeper and Humidrawer were aluminum. They are being replaced by plastics.

The evaporator shelf in the Frozen Food compartment was aluminum and is being replaced by Sanalloy.

I am sure you will appreciate that the element of time in making these substitutions is, and has been, one of tremendous importance, because new tools have for the most part been required, which has meant design work, production of new tools and the difficulty of getting new things into production. I would guess, from our own experience, that within the last three months, the appliance manufacturers of the United States have spent three-quarters of a million dollars in dies, molds and tools to stem the present emergency.

Zinc is another item that is on the list of things that are hard to get. The defense industries require vast quantities of zinc; some for die castings, but very largely for the making of brass. The Scovill Manufacturing Company alone is getting ready for the production of thirty-three million pounds per year more of brass than their former top production. Brass uses zinc in tremendous quantities.

The appliance business uses zinc for die castings, as in motor housings for fans, vacuum cleaners, et cetera, also as an important component of brass.

In a number of cases, we are building molds for the substitution of plastics for zinc die castings, and, in the case of fan motors, patterns are being provided for the substitution, if necessary, of cast iron bases.

Magnesium oxide, which is used as a filler around the element of range units, is mined in its natural state, but the requirement for this material—while it has been available up to now as required—is distinctly limited, and one wonders what will happen if that gives out.

Metallic magnesium is 100 per cent controlled for airplane castings. The ore comes from several states in this country and smelting capacity is the limiting factor.

About the only absolute requirement in our business for metallic magnesium is for alloying with zinc to produce a patented alloy called Zamac for zinc die castings. It is practically a necessity in many of the die castings that we use, and while but a small amount is needed, it may turn out to be, along with zinc, an important shortage.

Galvanized steel sheets, on account of the use of zinc, are also short in the market.

One never knows just how long these shortages are going to exist; first, because it is hard to be sure as to whether orders placed for defense may not have been "pyramided," and next, because capacities for smelting of materials is being increased tremendously. That goes for nickel, aluminum, zinc and magnesium.

The shortage is, as I have shown, also being controlled by the use of substitutes, and it seems entirely possible that with the increased production which will come with the increased smelting facilities, we may keep out of trouble. Certainly, everyone is alive to the situation, and we have great hopes.

It is interesting to speculate on the future. As an instance, molded plastics today are taking the place of a lot of die castings, both of aluminum and of magnesium. The plastic business is therefore expanding rapidly. One wonders if, when the emergency is over, the plastic industry will continue to hold the field, or if the vast increase in capacities for these metals may not result in price reductions and a "battle royal" for the business. In aluminum particularly, the research engineers are busy continuously, studying new markets and new ways in which aluminum can be used, against the day when there will be so much plant capacity that they won't know what to do with it.

Heat-resisting glass is finding a new place in range utensils and roaster utensils. It has even been suggested that waffle iron grids can be made of heat-resisting glass and that they will have the advantage of providing a view of the waffle as it browns, so that frequent "peaking" can be avoided.

Aside from the things that are limited by strict priority orders, the manufacturers' procurement people are having to go to great lengths in order to keep production lines going. They are riding freight cars to expedite deliveries, and they are taking out trucks and passenger cars to bring in small parts. They are having to store greater quantities of material, because deliveries are uncertain and because precise specifications are so difficult to meet. There seems to be no shortage of steel sheets, for instance, but to get exact specifications is highly difficult, and in some operations exact specifications have to be met on account of difficulties which otherwise develop in manufacture.

If you find an enameled steel cover on a roaster, an enameled steel door on a refrigerator evaporator, an enameled cooker pot in a range, a plastic motor housing on a vacuum cleaner, a plastic agitator in a washing machine, you can know, first, that engineers and production men have suffered of nights with the designs and tools, and you can know, also, that the costs in almost all cases have increased. The cost of rubber trays for refrigerators, as an instance, will be practically double the cost of the aluminum trays which we cannot use.

A strange thing about the shortages of the First World War period as compared with the last one, is that shortages this time appear in materials that are produced generally on our own continent; whereas in the last World War, the trouble came in such items as rubber and tin, which are produced abroad.

At present, there is all the rubber and tin that is needed; partly, I suppose, because the supply is shut off from Central Europe, so that we have ample. When, as and if we are in trouble with

(*Continued on page* 132)

Evaluating the Advantages of Purchased Power

By R. M. Winsborough
Advertising Manager, Middle West Service Company

An address before the Eighth Annual Sales Conference, Edison Electric Institute, Chicago, March 31-April 3

ASIDE from the economic advantages of purchased power there are many "plus values." It is with the evaluation of those "plus values" that this paper deals. In it I hope to do two things:

First: To show a tabulation of certain advantages of purchased power ranked with some degree of reliability into the order of importance of the advantages to various classes of industrial and commercial customers.

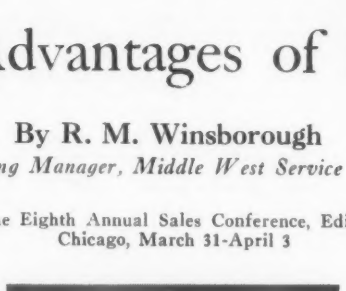
Second: To indicate a method and a procedure which, if followed up more widely by electric utility power sales departments, may result in the development of a completely dependable evaluation of the advantages of purchased power in the order of the importance of the various advantages to various classes of customers, and which may, at the same time, develop the most effective wording for the statement of such advantages.

As the information to be presented is the result of many people's work over a considerable period of time, some slight background information is necessary.

Almost every power salesman has had the experience of approaching a potential new power customer in the hope of getting a contract only to have the interview degenerate into an argument about whether the power company is earning too much money and therefore has rates that are too high.

An equally common experience is for the power salesman to prepare a thorough and sound analysis of the customer's power problems and then to have the presentation disregarded completely because the customer has been approached by an equipment salesman who has given him an attractive sales talk on the low cost of independent power supply as now perfected and marketed by the salesman's firm. The argument then gets to be one of 6 mills versus 11 mills, and the power salesman is on the hard end of the argument.

We all know that the difference between what the engine salesman holds



MR. WINSBOROUGH

out as the cost of power and the cost of purchased power is accounted for by the fact that the engine salesman is not figuring all the costs for a comparable quality of service, and frequently is figuring capacity without standby provision. When the costs of engine-power and purchased power are put on a really comparable basis, where the same quality and dependability of service is to be provided by both, purchased power is almost always cheaper.

To make this clear to the customer the power salesman falls back on what we sometimes call the "intangibles."

It becomes the task of the power salesman to make the "intangibles" sufficiently important and attractive to cause the customer to examine further into the matter of power supply and thereby see that the cost of generating a kilowatthour is not the most important thing in determining his source of power supply.

At this stage, the power salesman begins to do what might better have been done first. He begins to tell a story of Quality vs. Price. He emphasizes those intangible values of purchased power which more than make up for the apparent, but not real, difference in the cost per kilowatthour at the customer's switch. He begins to sell power on the basis of its value to the customer, instead of the cost to the power company. He begins to tell a quality story.

The whole growth of our industry has been built upon a story of Quality Service.

When we first began to sell incandescent lighting, it cost more than gas or kerosene light. A vacuum cleaner still costs more than a broom. An electric iron still costs more than a flat iron. A washing machine still costs more than a scrub board and tubs.

We have always had to sell Value instead of Price. Electric light was better because it was cleaner and safer. A vacuum cleaner was easier to use than a broom, and protected the health of the babies who played on the floor.

We urged the "intangibles." We may call them intangible, but these advantages of electric service have been sufficient to cause millions of people to invest billions of dollars in household equipment in order to get the benefit of these so-called "intangible" benefits.

The sales stories on these customer benefits for residential use were developed largely by the manufacturers, possibly because the sales departments of the manufacturers knew more about selling technique than the sales departments of the utilities. Utility people took the advantage story to their customers and sold the merchandise because of the advantages to the customer.

Individual power salesmen throughout the country developed their own sales stories to present the intangible customer benefits of purchased power. They worked out "less shut down time," "freedom from worry," "lower insurance rates," "cleaner" and many other valuable advantages of purchased power. They used these advantages whenever possible, and the advantages proved their worth in selling power.

The various power sales meetings of the Institute assisted greatly in developing and disseminating this information among power salesmen, and as a result

of the interest of the power sales people in developing a definite sales story a contest was conducted in 1939 to determine, if possible, all the customer benefits from purchased power which might be incorporated into a coherent sales presentation.

The contest was sponsored and conducted by Ashton B. Collin, originator and owner of Reddy Kilowatt, and was called "The Industrial and Commercial Customer Benefits Contest."

Power salesmen throughout the country entered the contest and submitted papers in which the customer advantages of purchased power were detailed.

The outcome of this contest was a list of 33 advantages of purchased power, stated in the form of the benefit which the customer derived.

In the results of the contest, when published by Mr. Collins, was collected for the first time, in one place, a complete statement of all the "intangible" customer benefits which the power salesmen throughout the country had been able to work out and test in actual selling.

Fig. 1

In this study lay the basis for constructing a sales story on purchased power that would have as much customer benefit appeal as the sales stories previously used in developing the residential market. The problem was to determine the proper beginning point, and the proper order of importance, so that the advantages might be presented in the most effective way possible.

We undertook to begin that work.

From Mr. Collins' list of 33 advantages we prepared a questionnaire to be submitted to industrial and commercial customers. We listed the 33 advantages, and then explained each one briefly in a short piece of selling copy.

Opposite each advantage were three places for a check mark. The reader of the questionnaire could check the advantage as being "Very Important," "Fairly Important," or "Not Important."

An explanation of the procedure to be used in interviewing the customers was prepared and sent with the questionnaires to the commercial managers of 20 companies in our system.

The questionnaires were used, returned, and the results tabulated. The

Some of the characteristics of our service are of the utmost importance to some of our customers, while other characteristics are more important to other customers.

So that we may constantly improve our service, we need to know which of its features mean the most to you. Please tell us how important you find each of these characteristics of your electric service:

	VERY Important	FAIRLY Important	NOT Important
CLEAN - Power delivered by wire leaves the smoke, soot, grime, oil smears and coal dust miles behind			
ALWAYS AVAILABLE - 24-hour service 365 days a year			
AUTOMATIC - You need not hire an overseer or attendant to keep your power supply coming			
CONSERVES CAPITAL - Requires no investment on your part. Lets you put your money in production equipment			
ADEQUATE - Plenty of power to meet your needs			
DOWNWARD PRICE TREND - More and more service at less and less cost per unit of service - a steady downward trend for 25 years			
CONVENIENT - Your power is as near as the nearest switch			
ADAPTABLE - Power where you want it and the way you want it			
KNOWN COSTS - Your monthly bill tells all; no hidden costs; no extras			
NO DEPRECIATION - Your power service is kept up-to-date without extra charges to you. No write-off of investment for power supply			
COMMUNITY BUILDER - The power company's organization consists of local citizens who buy local products and services and work for the community's welfare			
ECONOMY - Lower total costs because your power supply requires no man-power, materials, supervision, replacements of broken parts, investment, etc., etc.			
IMPROVES EMPLOYE MORALE - Makes your shop a cleaner, healthier, quieter, more comfortable place in which to work			
EFFICIENT - Does more work with less wasted effort			
HEALTHFUL - Cleaner air and better light make your plant more healthful			

	VERY Important	FAIRLY Important	NOT Important
PRODUCED BY EXPERTS - The quality of your electric service is the result of years of experience which novices cannot copy			
FLEXIBLE - Much or little to fit your needs. You can expand or contract with minimum delay and at minimum cost or investment			
FREE INFORMATION SERVICE - A capable staff of experienced power engineers to help you get the most out of your service and to recommend the most efficient, economical and safe electrical equipment			
REDUCES INSURANCE COST - Premiums are lower; many hazards removed			
INSTANTANEOUS - Production starts at the push of a button			
SAVES MAINTENANCE - Power delivered directly to the machines that use it eliminates many sources of wear and depreciation			
MODERN - Constantly taking advantage of new developments to provide you with the best and cheapest service possible			
IMPROVES PRODUCTION - Helps you to make better products in less time			
QUIET - Power delivered by wire leaves the noise and vibration miles behind			
RELIABLE - Dependable and uninterrupted power service			
ASSUMES RESPONSIBILITY - You do not have to worry about operating a power plant in addition to running your business			
SAFE - Electric power reduces fire and accident risks			
THE AMERICAN WAY - The American business man sticks to his last and lets others furnish him with specialized services			
SPACE SAVER - Lets you devote all your space to profitable production			
RUGGED - No job is too big and no hours are too long for electric power			
TAX SAVER - Your taxes would be higher and your tax accounting more complicated if you had to have your own power plant			
ELIMINATES WASTE - Helps you keep spoilage or reject losses at a minimum			
UNIFORM - Constant voltage protects your equipment and helps keep the quality of your products uniform			

Fig. 2

results are shown in the accompanying figures.

Figure 1 shows the front of the 4-page questionnaire. It was hoped this would assist in having the questions answered, and it seems to have served its purpose.

Figure 2 shows the inside two pages of the questionnaire, on which are listed the 33 advantages with a brief selling description.

I believe it is worth while to read the advantages, and the sales message with each, as shown in Fig. 2.

In filling out this questionnaire the customer showed his response to two things:

First: To the importance of the advantage listed.

Second: To the effectiveness of the sales wording.

It is quite likely that by changing the wording which accompanies some of these advantages they can be made to seem much more important to the customer. I will return to that later in connection with carrying the study further.

We received answered questionnaires from 313 customers. The number is not great enough to be absolutely dependable when broken down into kinds of business because the samples are too small. The total group is probably large enough to be a very dependable indicator of the relative importance of the various advantages for industrial and commercial customers as a whole class.

Figure 3 shows the order of importance of the 33 advantages. This tabulation shows the percentage of all customers who ranked the various advantages as "Very Important." It is therefore a frequency measure, and the percentages shown indicate the percentage of customers, taken at random, who would agree that the advantage mentioned is "Very Important."

For example, the leading advantage is "Always Available." It is an advantage so commonplace to us that we sometimes forget to mention it, yet 95 out of every 100 customers, if asked, would admit that the constant availability of electricity is "Very Important" in their businesses.

Another example, at the lower end of the scale, is "Quiet." We sometimes think to mention this if we are faced with threatened competition where noise would be detrimental. The scale shows that 44 out of every 100 customers, at random, would say that being "Quiet"

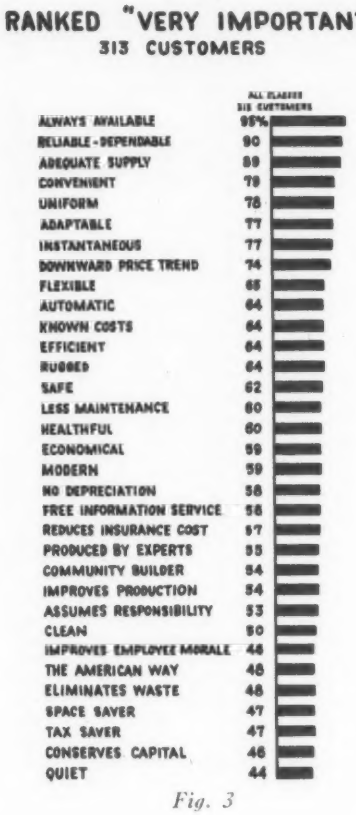


Fig. 3

is a very important advantage of electric power to them.

In between are the other 31 advantages. There are 26 advantages which are ranked "Very Important" by 50 per cent or more of all customers. It is a very powerful list of advantages. I doubt if a refrigerator salesman could think of 26 advantages that half the people who own refrigerators would agree were very important.

The top 10 advantages are ranked "Very Important" by 64 per cent or more of the customers. They are:

Always Available	95%
Reliable, Dependable	90%
Adequate Supply	89%
Convenient	79%
Uniform	78%
Adaptable	77%
Instantaneous	77%
Downward Price Trend	74%
Flexible	65%
Automatic	64%

It is probable that the present war situation changes the importance of some of these advantages. These findings were made in the summer of 1940. At that time there was not such a rush toward maximum production. Today the urgency for maximum production probably increases the importance of such things as "Always Available," "Adequate Supply," "Known Costs," "Less Maintenance," "No Depreciation," and others.

One great value of this tabulation lies in the preparation of printed sales material for industrial or commercial customers. If the material is to be used in the entire field of customers, all the advantages should be included, and the relative importance indicates something about the emphasis and amount of space that should be devoted to each.

For more specific application of the advantages to particular kinds of business the replies were subdivided into groups according to the nature of the business. The results are shown in Figure 4. Here we have broken down the replies into the following 12 groups, according to nature of business:

Coal Mines	16
Shops, Heavy Industries	23
Oil Pumping, Refining	33
Bottling, Packing, Canning	20
Cotton Gins	17
Grain Mills	24
Clothing Manufacturers	12
Dairies, Cold Storage	33
Wholesale Groceries, Bakeries	10
Movie Theaters	10
Buildings, Institutes	17
Retail Stores	57

It will be noticed that there is a wide fluctuation between classes, so far as their ranking of these advantages is concerned. Certain of the differences are quite obvious, such as the low importance of "Quiet" to coal mines and its high importance to buildings and institutes. Some of the other differences are less easily anticipated.

The differences are sufficient to indicate clearly that a power sales solicitation can be effectively designed for different kinds of business with the assurance that the customer will give attention to the advantages when they are presented in an order of importance that corresponds fairly closely to his own opinion of their importance.

For a short solicitation, or a presentation under difficulties, these scales make it possible to select the 10 most appealing advantages and present them in a short time or in short space.

Figure 5 is the same as Figure 4 except that everything except the top 10 advantages has been cut out for each class of business. The irregularity with which the bars appear across the figure is a good indication of the differences in relative importance to various kinds of business.

You will notice that the first four or five advantages seem to be constantly considered as "Very Important" yet they are advantages so commonplace that we

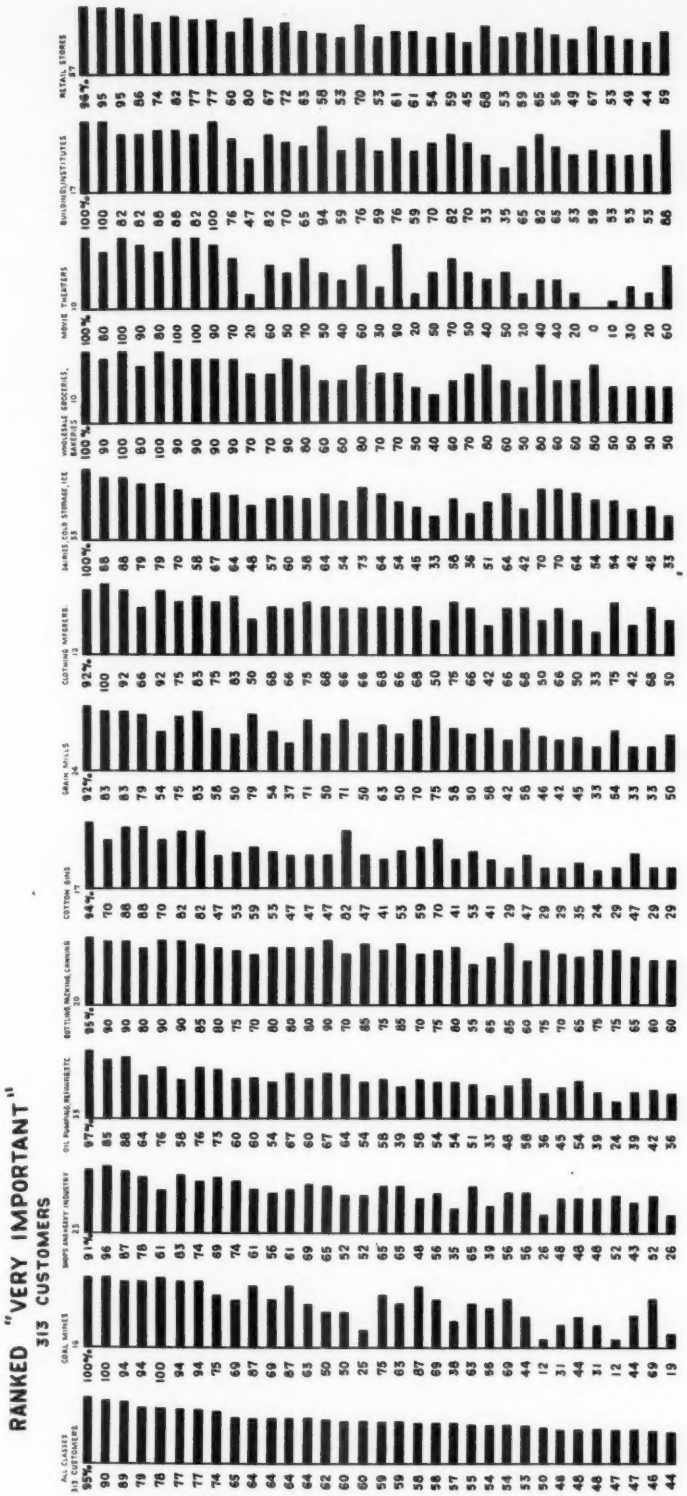


Fig. 4

tend to forget to emphasize them.

The advantages of more specific importance to each line of business are those which appear under that line of business but are not present under other lines.

By this process it is possible to hand-tailor a power sales presentation to the customer to be approached with a very fair knowledge of what will be acceptable and what will be questioned. Those advantages which are to be questioned should not be neglected, but it will require more selling to make them seem important to that particular customer.

Now what benefit can we draw from the investigation summarized in the figures?

First, it seems to me, we have found a method of determining what advantages our commercial and industrial customers consider important. We found in our experiment that the very act of filling out the questionnaire was in itself a pretty good sales presentation. It caused many customers to think of advantages they had never thought of.

Second, we have tested some wordings that are worthwhile. Those advantages which are ranked 70 per cent or better are probably pretty well stated in the questionnaire. Even those advantages ranked as high as 60 per cent may be fairly well stated. For advantages ranked below 60 per cent I would suggest experiments with new wording, and then submitting the questionnaire to a similar sample of customers, to see if the standing of the advantage is improved by the new wording. If it is, and if the sample of customers is comparable to the first, then the improvement is an improvement in the expression. By such a process tested sentences are developed, and once developed, can be used with a good deal of assurance.

Third, we have found at least a fair indication of the relative importance of the 33 advantages of purchased power, for commercial and industrial customers as a whole, and for certain classes of businesses.

In conclusion I would like to suggest that other companies carry this test a little further.

The cost is light. The questionnaires cost about $15 a thousand. The interviews are done by regular power salesmen in the regular course of their work. The tabulation is not very complicated, and can be done by regular employees in spare moments.

If the study could be extended to

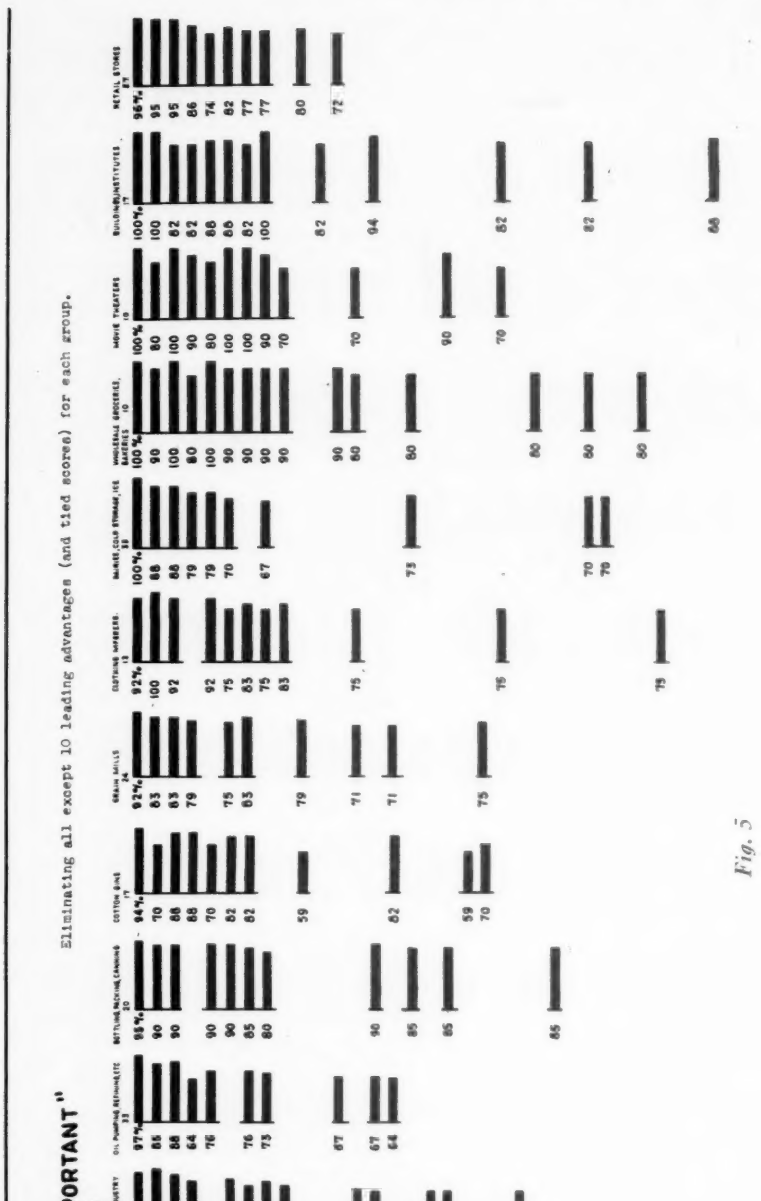


Fig. 5

cover four or five thousand customers then the breakdowns by classes of business would begin to have real reliability. Their value might be slightly different in various parts of the country, but such a study would be a sound basis upon which to design power sales solicitation and power sales advertising. Such advertising may become necessary in the face of increased competition from engine manufacturers following the national defense emergency.

Any of the material we have used or developed is available to any company that cares to use it, or that is interested in making a further study of this sort. If other companies do make such studies, our company would appreciate hearing the results.

Electrical Living in Defense and Other Federal Housing Projects

(*Continued from page* 127)

Japan, we will of course have fresh trouble with these items.

The future, following the great world struggle of today, looms darkly. We cannot prophesy the outcome, but there are a few things we do know.

There will be a vast industrial plant now given over to war materials and to the apparent prosperity that war produces, to be turned over to the uses of peace.

There will be millions of workers in war materials to be absorbed in the works of peace.

There will be more than a million young men, no longer needed for military services, who must find their places.

Business and Government will have to work miracles if our present economy is to be adjusted to the post-war times.

But we have everything—raw materials, plant, men, the "know-how" and the ideals. It can be done if all combine with the will to do it.

Meantime, is it not our job to keep the wheels of a peace-time economy turning—to always look toward higher standards of quality and use of electricity in the home, and to be ready, when the time comes, to take up the slack of material and kilowatt production, putting it where it can produce the leisure and happiness that make for contentment, and the American Way?

Helping Customers Keep Appliances Repaired

By Robert H. Fite

General Sales Manager, Ebasco Services, Inc.

An address before the Eighth Annual Sales Conference, Edison Electric Institute, Chicago, March 31-April 3

THE basic objective of utility companies is to bring the best possible electric service to their customers at a reasonable cost. In reaching this objective, the utility contributes importantly to Better Living for its Residential customers and to more profits and business success for its Commercial and Industrial customers.

All of us, of course, are fully aware of this basic objective, but it is inspiring to review it in the words of Mr. Walter S. Gifford, who in speaking of the corresponding objective of the American Telephone and Telegraph Company, said on the flysheet of that company's annual report for the year 1940:

"The ideal and aim of the American Telephone & Telegraph Company and its Associated Companies is a telephone service for the nation, free, so far as humanly possible, from imperfections, errors or delays, and enabling anyone anywhere to pick up a telephone and talk to anyone else anywhere else, clearly, quickly and at a reasonable cost."

In reaching the objective, however, of bringing the best possible service to their customers at a reasonable cost, utilities must take into consideration many different factors. For instance, the utility business is inherently a complex business of manufacturing, processing, selling, distributing, etc., some of which functions may be performed by many different agencies in numerous other businesses.

For example, a policy of dealer coordination has during recent years become more and more universal, and as a result, the retail dealer or store has become a major outlet of appliances, which in earlier days, when there was little customer acceptance and it was necessary to "pioneer" them, were sold largely by the utilities themselves.

Furthermore, the utility business is intensely retail in nature and touches all stores, factories, industries and homes in the territory served. As a result of these conditions, the invested capital in the utility business is many times greater in relation to revenue or income than in practically any other business. Whereas the investment in the utility industry is

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in the order of $7 or $8 per $1 of income, the investment in the meat packing industry, for instance, is only about 24c for each dollar of income.

Engineering developments, expansion of utility systems, customer demands for more refined service, have all added to the ratio of this capital investment in the utility business and have tended to increase the investment per dollar of income, and consequently the fixed charges per dollar of income. The trend toward high investment has also been speeded up by the widespread extension of utility lines to serve farm customers—in almost every case at a much higher investment per dollar of income for the extension than the ratio for the utility company as a whole.

It is an old story also to each of us that from year to year taxes have been increased, until now more than 17½c on the average out of every dollar of gross revenue of the electric utilities is paid to local, State and Federal tax collectors. Labor costs have risen, as well as cost of materials, and all these costs have been going up at a faster rate than the operating economies which utilities have been able to bring about. They are going up faster, too, than costs can be lowered by improvement in load factor brought about by sound utility service sales programs.

For all these reasons, therefore, all of the companies face the twin necessity of:

1. Making available revenues cover cost increases and still leave enough net income to keep the company in sound financial condition, and so in a position to attract the money needed to continue to expand and meet the demands of customers for additional service, and also to continue, as at present, to be adequately prepared to meet all of the demands arising from the National Defense program and thus release Government funds —which are certainly not now needed for the construction of generating and transmission facilities—for the purchase of battleships, armaments, airplanes, tanks, and all the other things so vital to the defense of this country.
2. Getting more allies in other businesses who can share the growing activities, that is, actually assume them and make a profit from them.

In line with the ideas just presented, utility companies have from time to time passed on to others functions which were first assumed in the pioneer stage, but which, when stabilized, could be better carried out by other businesses. Activities such as manufacturing switches, transformers, etc., which many companies needed and constructed in the early days, have long since been carried out by manufacturers. The distribution of appliances, already referred to, which in the early days was largely a function of the utilities, is more and more passing to the dealers and other appliance outlets.

The evolution with respect to transferring functions to other businesses that has taken place throughout the history of the electric utility industry becomes readily apparent when it is recalled that the first utility, that is, the Pearl Street Station, installed by Thomas A. Edison in New York, not only manufactured its own generators but also the lamp bulbs which its customers used. A more recent example perhaps is the wiring of homes, which at one time was an activity engaged in by utilities on a wide scale, but which has long since been almost completely assumed by the electrical contractor.

These examples show very clearly

what has been happening through the years and that many of the earlier pioneer functions have long since been assumed by others who now comprise what we know as the vast present-day electric industry, including utilities, manufacturers, distributors, dealers, contractors and many others.

The evolution which has taken place, and which has just been described, has been a healthy process and opportunities to extend it, with further benefits to everyone, will undoubtedly be found in further analyses of ways and means for various component parts of the electric industry to assume more and more of these collateral functions. Indeed there is a double urgency today to pursue such analyses as a means of keeping down costs, thereby enabling continuation of the downward trend of rates to all customers, thus permitting wider and wider use of electric service with its vast benefits to home, store and factory.

One particularly good opportunity for another business—in this case, electrical contracting—to assume some of the collateral functions that are now being performed by many utilities, would seem to exist in the repair of all kinds of electrical appliances which are in use on customers' premises. Perhaps I should say, which are not in use—because they need repairing—and are thus a source of loss not only to the customer, who is deprived of their use, but also to the utility which serves them, to the manufacturer who made them, and to the contractor who might repair them. Such a transfer of repair work from the utility to the contractor can be accomplished, of course, where the contractors or independent service organizations have established the facilities for satisfactory repair of customers' appliances at satisfactory prices both from the standpoint of the customer and the repair agency. This is a job which no doubt will not be accomplished overnight, but which surely will meet with success, to the benefit of all, if given sympathetic support and encouragement by the utility.

As a matter of fact, much progress has been made in the assumption of appliance repair work by contractors, and there is plenty of evidence to indicate that it is entirely feasible for others than the utility to do such work. It stands to reason, for instance, that an independent service organization established as specialists in appliance repair work can do the job for the customer better and cheaper—and still make a profit—than the utility where the complexity of operations and the necessarily secondary nature of the job make appliance repairing pretty much of a sideline when compared with the utility's job of manufacturing, transmitting and delivering low-cost electric service to its customers.

The successful experiences of utility companies where independent repair agencies have assumed the appliance repair job could be recited here at length. There are numerous such instances among the client companies of Ebasco Services Incorporated. There are also many other instances throughout the electric utility industry. I have a few quotations from several representatives of various companies which I believe will serve to show what is taking place today and the unquestionable success of the programs:

—A company in the South points out that:

"During our sales program in 1938 cards were given to each customer relative to dealers and independent appliance men in each area who were equipped to repair appliances for the customer. These cards are still in use and have proven to be very beneficial."

—Another company in the West states:

"In recent years we have been increasingly more active in directing appliance repair business to the dealers rather than to our own Repair Department. In 1941, we propose to become more aggressive than ever in building up repair dealers and causing them to become more aggressive on their own behalf."

—Another company sums up the situation like this:

"One of the most important phases of our business is putting appliances back into use that have been shelved for one reason or another. Getting appliances repaired is a major consideration. In the past we have sought to facilitate appliance repairs by sending them to our Service Department.

Although we cannot give up our efforts to keep customers' appliances in usable condition, we can better our dealer relations by throwing such repairs to them and to repair shops located in our territory.

Our customers will benefit. Often they have been forced to wait upon delivery by our own Service Department because we cannot maintain the necessary personnel to do rush work. This condition can be prevented if customers are shown where to get repairs made elsewhere."

—A utility in the East concludes after a thorough analysis that:

"In order for our customers to be sure of prompt servicing at reasonable cost, it is necessary that an adequate central independent repair agency be established."

It is apparent from these examples, which are only a very few of the many which could be cited, that the experiences of many utility companies throughout the country prove that it is very desirable for repair agencies to assume the function of repairing appliances. No doubt, as more and more utilities transfer repair work to these agencies, we will be able to look back from a time in the not too distant future upon the activity of repairing appliances as one which falls in the same category as that of wiring houses, namely, an activity which in earlier days was a necessary function of a utility company, but which, due to the evolution which has been taking place, has passed on to others who can do the job more satisfactorily for all concerned.

It can be said that dealers and contractors are wide awake to the opportunities facing them in this business of repairing appliances. Many of them are fully aware of the profits available from a properly conducted Repair Department. They appreciate, too, the desirable source of prospects for appliance sales which arise during the contacts made by repair men who are performing an adequate repair service for customers.

Various articles from the trade press show this to be true and will serve to indicate how well they appreciate that there is a profitable market for repair service and that such an activity affords them one of the best means of locating bonafide prospects for the appliances which they sell. I have with me a number of these articles, and by reading the captions of a few of them, I believe you will be impressed with the fact that the dealer is wide awake to the opportunities in repair work and that with a little coordination of effort on the part of the utility, he will be able to "take the ball" and do a worthwhile job from the standpoint of everyone. Here are the captions of some of these articles:

—"Use Repair Service for Making Sales"
—"Contract Service Business Can Show Profit in Small City"
—"Efficient Service Department Is Seen as Key to Customer Satisfaction and Repair Sales"
—"Success Story—From Basement, to Garage, to a New Building, John Geering Has Built His 24-Man Service Business"
—"Yearly Apartment Maintenance Contracts Yield Steady Income and Profit for Service Firm"
—"Service a Natural for Neighborhood Dealer"

The articles to which I have just referred were published in various issues of such magazines as *Air Conditioning & Refrigeration News, Electrical Merchandising* and *Electrical Dealer,* and have described the case histories of dealers and contractors in many sections of the country.

The interest of dealers in appliance

(*Continued on page* 140)

The Farmer Helps Build the Hi-Line Load

By D. M. Hobart

Manager, Commercial Research, Curtis Publishing Company, Philadelphia, Pa.

An address before the Eighth Annual Sales Conference, Edison Electric Institute, Chicago, Ill., March 31 - April 3

THE extension of rural electrification has proceeded so rapidly in recent years that few of us are fully aware of the vast new market for appliances and electrical equipment which has been created almost overnight. Only those who see with their own eyes the changes that electricity has brought about in farm living and farm business can realize the extent to which farmers are buying and using all kinds of electrical appliances and equipment. And with this market change have come increases in the hi-line load.

Fifteen years ago only 250,000 farms were using hi-line electric service, but in 1940 this figure had increased eightfold to reach a total of approximately 2,000,000. The largest part of this increase has occurred since 1935. The opening up of hi-line service in any farm community creates an immediate and active buying market for all types of appliances and electrical equipment.

In addition to this electrical expansion, tank and bottled gas is broadening the market for gas appliances. It is estimated that in urban and rural areas some 325,000 new installations were made in 1940, and that approximately 1,125,000 homes are now tank or bottled gas customers. More and more farm homes are being supplied with this new type of fuel. Undoubtedly this represents active competition for the electrical industry.

On the basis of our own observations, and of reports of the increased vitality that the rural market is showing, the Division of Commercial Research of The Curtis Publishing Company undertook, in the summer and fall of 1940, a study of the appliance buying habits of farm families. Personal interviews were conducted by experienced investigators under careful supervision, among farm families in 13 widely scattered farming communities entirely or partially served by hi-lines. Ninety per cent of the families interviewed were using electricity—89 per cent had hi-line service.

Information was obtained from groups of families as follows:

Refrigeration

(a) Families buying mechanical refrigerators during 1940.

MR. HOBART

(b) Farm families using ice as a refrigerant.

(c) Supplementary information on refrigeration from families interviewed primarily on laundry equipment.

Laundry Equipment

(a) Users of washers bought 7 to 12 years ago.

(b) Families buying washers during 1940.

(c) Supplementary information on laundry equipment from families interviewed primarily on refrigeration.

Appliances

All families interviewed supplied information concerning ownership and plans for buying additional appliances.

Electricity Outside the Home

All families interviewed supplied information concerning electrical equipment for farm use outside the house.

In addition to consumer interviews, approximately 100 distributors and 300 retailers were interviewed to learn the attitude of these groups toward current problems in the industry. Because of the limitations of space, the best we can do is to hit the high spots of this study, picking out those items which should be of greatest interest to electric utility salespeople.*

* EDITORS NOTE:—Mr. Hobart presented a series of charts which visualized the results of his enlightening survey. Unfortunately the number is too large to include in this issue of the BULLETIN. However, the complete series is so important and of such usefulness in rural sales development, that Mr. Hobart has agreed to mail a booklet with the entire story to anyone requesting it. Inquiries should be sent direct to D. M. Hobart, Commercial Research Division, Curtis Publishing Co., Philadelphia, Pa.

(1) *Location of Families Interviewed*

Farm families were interviewed in the areas around—

Mexia and Bonham, Texas
Stillwater, Oklahoma
Abilene, Kansas
Spencer, Iowa
Fairmount and Faribault, Minnesota
Urbana and Wooster, Ohio
Norwich and Oneonta, New York
Exeter, New Hampshire

Number and Type of Interviews

Owners of mechanical refrigerators bought in 1940	616
Users of ice only	312
Families using washers 7 to 12 years old	142
Owners of washers bought in 1940	229
Miscellaneous owners of used appliances	*40
	1,339

*Tabulated only under appliance and general farm information section.

(2) *How Long Have You Had Hi-Line Service?*

The length of time that these farm families have had hi-line service reflects the recent acceleration of the rural electrification movement. The figures show that 45 per cent of these homes have been "hooked up" for periods of two years or less. Although the territories studied were selected without prior knowledge of when they were electrified, the purchase of major appliances, as we shall see later, correlates closely with the recency of electrification. Eleven per cent of these farm homes did not have hi-line service.

(3) *Is Bottled Gas or Tank Gas Available Near Your Farm?*

Evidently tank or bottled (L-P) gas truck routes parallel the hi-lines, closely. The figures show that 89 per cent of the families interviewed reported the availability of this type of gas service and 89 per cent of these same homes were enjoying hi-line electricity. Although the survey does not show the actual number of users of tank or bottled gas, it is significant that nine out of ten families stated that this form of fuel was available.

In discussing household appliances, first let us high-spot the reactions of farm families who bought mechanical refrigerators during 1940.

(4) *What Size Refrigerator Did You Buy?*

A quarter of the farm families bought mechanical refrigerators 7 cubic feet or larger in size. Only 12 per cent of city families bought refrigerators 7 cubic feet or larger. So the farmer is buying larger boxes. It is hardly necessary to point out the greater load building and profit characteristics of the larger refrigerators which the farmer is buying.

(5) *What Features Did You Like Particularly About Your New Refrigerator?*

The farm buyer gives enthusiastic endorsement to such things as bigger and better automatic ice trays (20 per cent), special trays and compartments (19 per cent), ample storage space (18 per cent), reflecting flexibility of arrangements, and he wants dependable performance. These are reasonable and rational sales arguments to which the farmer will respond if they are put before him.

(6) *What Part Did the Refrigerator Salesman Play in the Purchase?*

Even in these farming communities, where the coming of the hi-line was an invitation to the dealer, the buyer initiated 67 per cent of the sales. In 46 per cent of the instances the sale was started and finished on the dealer's floor. In only 26 per cent of the cases was the sale initiated by the salesman. Apparently the farmer will buy in time if left alone; he might buy sooner, and help you build a greater load if more sales pressure was put on him.

(7) *What Kind of Refrigerator Did You Own Before?*

Of primary interest here is the picture of the sources from which refrigerator sales are coming. Sixty-one per cent of these farm sales in 1940 were to families who formerly had used ice as a refrigerant, 8 per cent to families who had owned mechanical refrigeration previously (many of these were non-electric) and 31 per cent to families who had owned no refrigerator.

With 92 per cent of the farm sales going to homes where a mechanical refrigerator was not owned previously, the problem of the trade-in is practically non-existent.

(8) *Why Did You Happen to Buy Just When You Did?*

(Buyers Who Previously Owned an Ice Refrigerator)

Thirty-nine per cent of the farm families previously using an ice refrigerator bought just when they did *because they had just got hi-line service.* Only 14 per cent bought because of the price reduction and only 11 per cent because they had not been financially able previously. These families were used to refrigeration — constructive local selling could have sold more farm families electric refrigeration, which would have increased the hi-line load.

(9) *Why Did You Happen to Buy Just When You Did?*

(Buyers Who Did Not Previously Own a Refrigerator)

Families who had previously owned no refrigeration showed the need for more selling. But even here, 25 per cent bought because they had just got electricity, adding materially to the hi-line load. Thirteen per cent of these families bought because of improved income and 12 per cent because of the price reduction. This group needs more selling, because the families are not accustomed to refrigeration. But they can afford to buy.

(10) *Are You Satisfied with Ice as a Refrigerant?*

The second group interviewed on refrigeration were present users of ice. Fifty-eight per cent of the farm families now using ice are dissatisfied with ice refrigeration. Because the same reasons were used by those satisfied and those who were dissatisfied, we wondered how much of the dissatisfaction was due to poor and antiquated ice refrigerators. To check this, we analyzed the answers of the families who were using a modern ice refrigerator. Seventy-four per cent of the families using a modern ice refrigerator were satisfied with ice.

If ice users are to be sold mechanical refrigeration, the sale must be made before a new, modern ice refrigerator is put in use.

(11) *Is There a Locker Storage Plant Within Convenient Distance from Your Farm?*

Over two-thirds of the farm families interviewed were within convenient distance from a locker storage plant and 30 per cent already rent space. The use of locker space is growing, and with this growth comes an increasing demand for electricity.

The next section of our study has to do with the market for laundry equipment. The first group interviewed were farm families who were using washers they purchased 7 to 12 years ago, to get the reaction of people who were using old and obsolete equipment toward replacing with new modern washers.

(12) *Are You Familiar With the Fully Automatic Washer?*

Among the questions asked this group were: Are you familiar with the fully automatic washer and if so, have you considered buying one? The news value of the automatic washer is high in cities —47 per cent are familiar with it. But only 28 per cent of these farm families were familiar with the fully automatic washer and only 6 per cent had considered buying one. Evidently the small amount of advertising and sales promotion that has been put against this market is reflected in the attitude of the buyer toward this new type of washer. People don't usually buy things about which they have not heard.

(13) *Do You Own an Ironer? If Not Have You Considered Buying One?*

Ironers build the load—when they are in use in customers' homes. But in city and in farm community, about 9 per cent of the families interviewed owned ironers.

Among farm families using washers bought 7 to 12 years ago 84 per cent of the families neither own nor want ironers. Ironer sales are increasing. But if the industry wants to build the load on rural lines, it must see that farm families know about the ironer and what it will do for them.

The second group interviewed on laundry equipment was made up of families who purchased washers during 1940.

(14) *What Features Do You Particularly Like About Your New Washer?*

The features these farm families liked about their new washers suggest that they are interested in the kind of job the washer will do in getting clothes clean. New and improved wringers, greater efficiency in cleaning clothes, improved operating controls, pumps and drains, ease of operation—these and other improvements in washer construction were the basis of the sale of new washers to farm families during 1940.

Since the basis of these sales was so real and so sensible, it would seem that the washer market in farming commun-

ities could be expanded consequentially by sales effort on the part of merchandising utilities and dealers.

(15) *Are You Familiar With the Fully Automatic Washer? If So, Have You Considered Buying One?*

Only 18 per cent of the farm families buying washers during 1940 were familiar with the automatic washer and only 5 per cent of them had considered the purchase of this new type of washer. The interest shown by farm buyers of washers in mechanical improvements indicates that they would have been interested in knowing more about the automatic washer.

(16) *Do You Own An Ironer? If Not, Have You Considered Buying One?*

Four per cent of the farm families buying washers during 1940 own ironers. This figure is smaller than among old washer owners, because it was the coming of the hi-line that motivated many of these washer sales, and families cannot buy all the electrical equipment they need at one fell swoop.

The 7 per cent who are considering purchasing ironers compares favorably with the same group in the urban market. But the need for ironers among farm families is great. Here is a good load builder for utilities. Additional sales effort and demonstration behind the ironer should help increase the load.

(17-28) *Farm Use of Other Household Appliances*

An inventory of electrical appliances and equipment other than refrigerators and washers, was taken in each of the farm homes called on. Likewise these same families were asked what other appliances they planned to buy. In considering the information obtained it should be remembered that 89 per cent of these homes were "hooked up" to hi-lines.

(17) Electric Ranges
(18) Gas Ranges
(19) Vacuum Cleaners
(20) Washers
(21) Electric Water Heaters
(22) Radios
(23) Hand Irons
(24) Toasters
(25) Waffle Irons & Grills
(26) Mixers
(27) Fans
(28) Electric Clocks

A study of inventory, by age of the various appliances, indicates clearly that the purchases of farm families have contributed to the increase in sales enjoyed by the industry in recent years, and have contributed materially to the hi-line load. With but two exceptions (vacuum cleaners 29 per cent and waffle irons and grills 31 per cent) at least one-third of all the other pieces of electrical household equipment have been purchased within the last two years.

That the buying festival will continue is indicated by the consequential percentage of families who are carrying a wide variety of appliances on their current want lists. The figures indicate a new and vigorous tempo of buying by farm families. And they indicate also that this buying is going to continue.

(29) *Farm Use of Electricity Outside the House*

Because farming is a business as well as a way of life, it is not surprising to find electricity used extensively outside the house. On the farms studied, electricity is used for exterior lighting in 78 per cent of the cases and another 7 per cent plan to install some type of outside lighting. Ten per cent of these farms are without hi-line service. Only 12 per cent of those interviewed had electricity available and did not use it for lighting outside the home. Sixty per cent of the farms used electricity as a source of power for operating machinery or tools and 16 per cent plan to buy some equipment of that sort. Here are great possibilities of increasing the hi-line load.

(30) *Lighting Outside the House*

Sixty-seven per cent of those interviewed used electricity to light barns and another 10 per cent are planning to install barn lighting. Taking into account that 10 per cent of these farms that were not electrified, the use of electricity for barn lighting is nearing the point of saturation.

Yard lighting, while not as general as barn lighting, is in use by 60 per cent of these farmers and another 5 per cent have this improvement on their want list. Poultry houses are next, 40 per cent being lighted electrically with an additional 10 per cent scheduled for wiring. Twelve per cent of miscellaneous outbuildings, such as roadside stands, garages, smokehouses, machine sheds, laundries and milkhouses are lighted electrically.

(31) *Electrical Equipment Used Outside the House*

Sixty per cent of the farmers employ electricity for powering some tool or other piece of equipment used in the farm operation. Thirty-nine per cent use electricity to do the backbreaking job of pumping water for livestock, while 12 per cent more were planning to buy such equipment. Other uses range from machine shop equipment (17 per cent), milking machines (15 per cent), electric fence (14 per cent), cream separator (13 per cent), brooder and/or incubator (12 per cent), down to electric hoists for filling silos and granaries and for putting hay in the mow.

(32) *How Many Electric Motors Do You Have?*

The inventory of electric motors (apart from those actually incorporated in appliances) indicates a hopeful market for such equipment. Forty-nine per cent of the farmers interviewed had at least one electric motor. Of the motors owned, 46 per cent were ¼ horsepower and under, 27 per cent were ½ horsepower.

Conclusion

Because hi-line customers in many areas are widely scattered, profitable load building is best accomplished by increasing the electrical demands of each rural and farm family on the hi-line. Some farm families rush to buy appliances as soon as they tap into a hi-line. They buy refrigerators, washers, home, yard and barn lighting equipment, small appliances and electrical equipment for use outside the house.

Today the farmer is using many electrical appliances and items of electrical equipment. He also has many electrical items on his shopping list. But without creative selling by utilities, dealers and manufacturers, farmers are likely to delay buying the load-building appliances and equipment which they need, until the slow process of word of mouth comment arouses their interest. The evidence shows that they buy. But it would be better if many bought sooner. The dealers selling this market are rarely able to pioneer. The responsibility for developing the market rests largely on the manufacturer and the utility.

Because farming is a business as well as a way of life, the farmer is potentially electricity's most abundant user. The building of the hi-line load depends on how quickly the farmer is sold the electrical appliances for the home and the electrical equipment for the farm.

There is no question that the farm market is rich in potentiality. But increases in the hi-line load are not offered free—they mean work on the part of salespeople.

The Fluorescent Challenge

By P. H. Powers
Vice-President, West Penn Power Company

An address before the Eighth Annual Sales Conference, Edison Electric Institute, Chicago, March 31-April 3

FLUORESCENT lighting was more or less casually announced to the industry in April, 1938—just about three years ago.

Immediately afterward things began to happen with surprising rapidity. The early fanfare of exaggerated publicity and promotion, the uncertainty of the direction power factor and flicker were going to take, the obvious inadequacy of equipment, the damaging possibilities to utility revenues and the apparent undermining of the Better Light-Better Sight program presented a composite picture which was naturally disturbing to our industry. It is no wonder that many utility executives were inclined to question the customer advantages of this expensive new light source. Nor is it surprising that, in the early days, an effort was made to promote fluorescent lighting only for supplementary and auxiliary applications where it then seemed best suited.

All of these matters were taken into careful account by the Lighting Sales Committee and those of you who keep abreast of such information are entirely familiar with their able report on the subject.

During the next year, things continued to move fast. The cost of producing light by fluorescent sources was more than halved. It became apparent that this was a source of general lighting as well as auxiliary lighting. It also became clear that there had to be a coordinated industry program for the sale of fluorescent lighting or else the whole theory of light for seeing and adequate lighting sales would be cast into the discard in favor of gadget sales.

These were the conditions at the moment of last year's meeting here, at which time the well-known statement of policy was adopted and the whole question of fluorescent lighting thrashed out in an all-day industry conference under the able direction of George Whitwell. That conference seemed to clear the air for the time being, to bring about a satisfactory, mutual understanding and to re-establish the well-accepted but waning cooperative spirit within the industry. Thus, the "headquarters" thinking and objectives of both manufacturers and utilities were brought into harmony and we were off to a fresh start.

MR. POWERS

Now, just one year later, we find that many other things have happened—action has again been swift. Manufacturers, in their advertising, seem to be conscientiously telling the right-light story. Fixture and, particularly, lamp prices have continued to drop. More fixtures are available. Lamp sales have grown by leaps and bounds.

1938	200,000
1939	1,600,000
1940	7,100,000

and 1941 will produce estimated sales of 19,000,000 units.

New lamp and fixture factories are springing up like mushrooms. A new industry has developed from nothing in 1938 to a $250 million business in 1941. (*Electrical World*, Feb. 8, 1941.) Certification of lighting units is improving, power factor and flicker are under reasonably good control. Yet, in spite of this pretty picture, the lighting industry is riding for a fall because *fluorescent is not being sold—it is being bought*. The "headquarters" thinking of a year ago has not reached down to the firing line—down to the fixture salesman. This is particularly true of the jobber fixture salesman.

Of course, people are *buying* fluorescent lighting. Otherwise, with so little *selling* by our industry, how could we have such a phenomenal growth in lamp and fixture production? The fact that our customers are *buying* is just where the trouble lies. But real facts about lighting are not reaching the buyers of lighting. They are getting only part of the story—that part which deals with what fluorescent is, but not the part which tells what fluorescent can and should do. Yes, they are *buying*, but they are not being *sold*.

In one extensive survey, the results of which have been made available to me, a check was made on why fluorescent was installed in a large number of small stores. Thirty-seven per cent of the jobs resulted from direct selling, 42 per cent resulted from the customer seeing another fluorescent job and inquiring as to where he could buy one like it. Twenty-one per cent resulted from one business man recommending fluorescent to another. Here we have almost two-thirds of the jobs definitely *bought* and not *sold* and you may make your own guess how many of the 37 per cent reportedly sold were sold without adequate engineering advice or without being founded on the light-for-seeing needs.

What did the salesmen say who sold those jobs? In the majority of cases, they said—"Fluorescent cuts current cost," "Buy fluorescent lighting and cut your bill in half," "Save enough on your electric bill to pay for these new fluorescent fixtures in 12 months." This same survey revealed that customers knew only half the story—the half which says that fluorescent is efficient and that it will reduce current cost. What they did *not* know was how much and what kind of light they should have, and that fluorescent would supply this correct and adequate light. All checks seem to indicate that, by and large, the customer is

being told what fluorescent *saves* but not what fluorescent gives.

Prospective customers are being told about fluorescent lighting through the magazines and radios, through some utility advertising, but mainly over the back fence and by fixture salesmen. The great weakness is that the fixture salesman is not informed on the lighting story, is primarily concerned with the easy sale of fixtures, has no great inducement to sell the job *up* and is not working cooperatively with the utility in the interest of selling engineered lighting adequacy. This is startling when we remember that the direct contact of a salesman is our most important selling tool. The result is that more and more substandard or half-sold jobs are going in. These substandard jobs are getting a toe-hold that will keep down the good jobs.

Our industry was warned last year, at this meeting, that we were headed for trouble if we didn't educate all sales outlets to sell on the basis of adequate lighting and counteract the tendency of fluorescent sales to develop solely on the basis of gadgets and lower bills. We were told that the responsibility for the orderly development of this new lighting force was ours, because we have closer and better contact with our customers than any fixture sales organization can possibly have. Although we occasionally hear of fine isolated examples of good installations, I am afraid that the majority of our companies did not seriously heed this warning.

It may be that many of us looked upon the fluorescent situation as a repetition of the experiences incident to the introduction and the subsequent development of tungsten lighting. We have been told, in several reports and in very plain language, that this is a false assumption. In those days there was little lighting and there were but few customers. Then new loads came from new customers; today new loads must come from present customers. These and other such circumstances destroy the value of our tungsten experience as a guide for our present-day actions.

Just where are we now and which way are we headed? During the past seven or eight years we have had a new knowledge and conception of lighting values and, upon the foundation of this information, the industry has sold *lighting* with a high degree of enthusiasm and some success. *If* we can point with pride to having doubled the average lighting levels in commercial establishments, our pride vanishes when we realize that this merely means increasing averages from 4½ to 9 footcandles. Of course, we have known that there should be more light, but it has always been necessary to compromise and sell what we could, instead of what the customer should have. Fluorescent now gives us the opportunity to compromise on substantially higher levels.

We are talking now in terms of 50 footcandles as a reasonable minimum aim for a satisfactory lighting job. There is some bland talk of the possibility of reaching these average levels with fluorescent and automatically solving all our problems. But, remember that 50 footcandle levels would mean at least five times what we now have. It took us seven to eight years to double the lighting levels, so a further increase of five times in any short period is quite optimistic, to say the least.

Who is doing the job of selling up to this 50 footcandle level? Results seem to indicate that, with a few exceptions, the job is not being done now. It is certain that the buyers do not as yet know lighting values, they don't know that good lighting is not expensive, that relatively small increases in sales or production will quickly liquidate both the fixture and current cost, although, at the moment, equipment costs may seem to be discouragingly high. Industrial customers do not yet know the production and employee health value of good lighting.

Who *will* tell them? Who will sell to the buyer the idea of what lighting *will* do? The thing that is being told to the customer now is that he can get the *same amount of light* for *less money*. The jobber fixture salesman is not telling the customer how much light he really needs and should have or how cheap the benefits of good lighting are. I doubt if we have a right to expect him to have any other attitude, unless he is properly trained and guided. Our utility salesmen, on the other hand, should know this story but the cold facts indicate that *they* are not making much impression.

What *we* are interested in as an industry is the sale of kilowatthours. We don't need to worry about our kilowatthour sales *if* the lighting jobs sold provide levels of illumination of accepted adequacy for the task to be performed. That IF is a big one! Let me remind you again, that the present all-out average of 50 footcandles which seems to be our current minimum aim, is five times what we now have. We *will* need to worry, and struggle, and sweat, and sell, in order to realize any such magnitude of increase. Surveys show that our customers have little conception of any such levels. Only four out of 100 store owners surveyed believed that they needed as much as 100 per cent increase in lighting, only one of these said 200 per cent, 55 said no more light was needed, or only 25 per cent more. Therefore, if we deal for a moment in averages, customers with about 10 footcandles think they might profitably use 12½ or maybe 15—but none think they need 50!

This is a tough selling job. But, who is going to do it if we don't? During the past six or eight years of our light selling experience, it has been common to increase connected loads two and threefold. This produced a cost of lighting sales which will seem low indeed compared to the selling cost we are confronted with now. Good fluorescent installations will be hard to sell and they will require more engineering and, hence, they will be more costly. We will not see many load-doubling jobs for a while.

Ninety-five per cent of the average fluorescent jobs surveyed have gone in without engineering help and without any apparent effort having been made to get any such help. The average fixture salesman is not equipped to render engineering service nor, indeed, is he even aware of its need. Most salesmen don't know why 50 footcandles *is* desirable in a store. They may know that more light is needed, but how much more is beyond their knowledge—and maybe they don't even care. Jobs are going in too fast and sales are being made too easily for the salesman to worry about engineering or adequate lighting levels. So, the customer, on the average, gets neither engineering nor good lighting.

Finally, what should we do about it? Our utility industry must take the offensive, take the bit in its teeth and take over the responsibility for selling engineered fluorescent lighting jobs. We must not be satisfied with minimum, easily-sold lighting levels. We must not be mislead nor fooled by the occasional job which causes no loss in load. It is time to stop shadow-boxing and get down to a real selling job.

This fluorescent lighting development is an outstanding contribution to lighting art and practice, and is still in its infancy. More and more utilization

equipment is becoming available and the overall cost of fluorescent lighting is constantly going down. We are gaining experience in its proper application and the rapid development of its use will undoubtedly continue. Fluorescent lighting is a great, new tool for the practical realization of higher levels of light for seeing, light for selling and light for production. What good or harm this tool does the electrical industry will depend upon how the electrical industry, as a whole, uses it. There seem to me to be a number of things we should do. Among them are—

(1) Be sure we know what kind of fluorescent jobs are being sold in our respective areas. Many of us are being surprised by what we find out when we make a real effort to get customer information.

(2) Use fluorescent as a sales tool. Be aggressive, don't take a defensive attitude. Don't be satisfied to sell just the same load in fluorescent that was previously in use in incandescent. Remember that customers need and are entitled to more lighting than they have had. Find out how to sell the lighting job the customer really should have. Usually, this will require increased wattage. Learn how to use this new tool to sell two or three jobs where you sold only one before.

(3) Set up your sales operation so it encourages your salesmen to do a good job of promoting fluorescent lighting where it is in the interest of the customer, rather than simply giving it "lip service" and proceeding to go the easy way by selling an inadequate fixture installation. Recognize that lighting sales costs are going to increase for a temporary period. However, don't let this stand in the way of maintaining an organization which allows you to get in on as many jobs as possible, to see that the customer gets the lighting he is entitled to.

(4) Encourage the legitimate distributor or dealer, who is trying to do a constructive job, by really effective cooperation and keep after the manufacturers and jobbers to get their "headquarters principles" down to the firing line—so real lighting sales will result.

(5) Have a planned, intelligent and informative fluorescent advertising program.

(6) Do a thorough job of education which will include continuous training of your own sales personnel to keep them abreast of the new things that are rapidly developing in the fluorescent field. This will also include frequently repeated general meetings with contractor, jobber, dealer, manufacturer and utility representatives to coordinate their knowledge and effort and to keep them informed of progress. It should include smaller meetings held regularly for the representatives of the various branches of the industry who are working on the local lighting market. This will keep the firing line coordinated and encourage the sale of light rather than gadgets.

(7) Obtain high-quality, key fluorescent lighting installations as rapidly as possible and strategically located throughout your property to act as pace setters for other installations. Don't forget that *poor jobs* are effective bellwethers for other *poor jobs* but that *good jobs* likewise get more *good jobs*.

(8) Make good fluorescent lighting installations in your own properties as you have occasion to make lighting changes.

(9) Finally, sell footcandles, sell lighting levels—forget wattage.

Our industry has tackled many difficult problems, even more severe than this one, in a cooperative way. Fluorescent can be made one of the greatest lighting benefits that has ever come to our customers and a boon to our lighting loads. Cooperative effort can do it. If we tackle the job as vigorously as we have other jobs in the past, we will not only continue to find the science of seeing the controlling factor in the picture but we will convert fluorescent lighting from a headache into a useful customer service and a first-class sales tool.

This is fluorescent lighting's challenge to our industry.

Helping Customers Keep Appliances Repaired

(*Continued from page* 134)

repair work is further clearly demonstrated by such advertisements as those which I have here and which read in part as follows:

—"We repair any make of Radio or Household Electric Appliance"—Doc Miller Radio Service

—"We Repair . . . Radios, Refrigerators, Washing Machines, and Everything Electrical!"—Wilson Electric Shop

—"For Complete Electrical Service Call 954. We are as near as your phone."—Drake Electric Company

—"There Is No Substitute for GOOD WORK and that is the kind we do!"—Penman Electric Company

It can be concluded, therefore, that the dealers are wide awake to the opportunities which exist. Although it is obviously out of the question, where the utility has done practically all of the repair work for many years, to make the transfer overnight, it appears possible, because of the interest of the dealers in the subject, that with sympathetic support on the part of the utility, the transfer could be made gradually to the benefit of everyone. In other words, there will undoubtedly be a transition period in many specific instances, but the experiences recited, of utility companies and dealers alike, certainly would seem to prove that the job can be accomplished over a period of time.

So it might well be concluded, where utilities still do most of the repair work, that now is none too soon to consider the desirability of the contractors and dealers assuming the job and of lending support to them in doing it. To be sure, it is doubly important to start now since the repair of appliances may become even more important in the near future than it is today. This possibility arises from the fact that the National Defense program and the necessary priorities and possible curtailment of appliance production, will make it even more important than ever to help the customer to keep the "old appliance" going because he may not be able to buy a new one to replace it.

Finally, it is important to get started on the job of transferring appliance repair work to dealers and contractors because such transfer is one of those steps which will enable utility companies better to make available income cover all the additional costs which are being incurred and still have enough net income left to keep the company in sound financial condition and so maintain the rating which is necessary to attract the additional capital needed to meet the future growing demands of all customers for service.

Northwest Accountants to Meet in May

ACCOUNTANTS of the Northwest utilities will gather at Baker, Ore., May 15-16, for the annual meeting of the Accounting & Business Practice Section of the Northwest Electric Light & Power Assn., according to announcement by Paul R. Enright, Eastern Oregon Light & Power Co., chairman. Theme of the meeting will be the building of management policy around the accounting department.

Danger—Men At Work

By William Feinbloom, Ph.D.

Director of Public Health Bureau, American Optometric Association, New York

An address before the Eighth Annual Sales Conference, Edison Electric Institute, Chicago, March 31-April 3

AS electric utility men and illuminating engineers, you are concerned with the problem of increasing visual efficiency by utilizing modern lighting science. We optometrists also consider this as an inseparable part of our professional province, but we are most specifically concerned with the technique of increasing visual efficiency through improving the efficiency of the visual organ—the human eye. Thus, we are both concerned with the problem of better sight.

No one who is at all aware of the facts will minimize the tremendous magnitude of this problem in present-day life. On every hand, we have striking evidence of the vital importance of vision not only in safeguarding life and insuring happiness, but in getting the work of our highly industrialized civilization accomplished. A hundred years ago a man might get along—not well, perhaps, but nevertheless he could get along—without a high degree of visual efficiency. But not today. The increased tempo of modern life in all its aspects—the intricacies and speed of factory and office operations, the tremendously stepped-up pace of our various means of locomotion, and—yes—even the changes that have taken place in our home life and environment—means that the man or woman who doesn't see adequately is definitely out of the running. And not only that; such a person's handicap constitutes a very real menace both to himself and the others around him.

You illuminating engineers and utility men have met this problem by immeasurably improving the surroundings in which we live and work. Without the application of your skill and science, the rest of our technological improvements could hardly be utilized. We optometrists and other eye specialists, on the other hand, have tackled the problem from its human aspect. The human eye *is* the most overworked part of the body. While it is a wonderful instrument it is not always perfect, and, when it is, it is not always equal to the strain that is

DR. FEINBLOOM

put upon it. So our skill and science have been directed toward making the eye equal to its tasks.

Just as you have made remarkable advances in your special field, so have we progressed far in ours. Modern optometric science is now capable of remedying more than 95 per cent of all visual defects. Not only can we bring people with abnormal or defective vision up to normal, but by timely and proper application of our technique we can prevent people from developing handicapping defects.

But while we are thus equipped to handle the technical visual problems which arise, we find ourselves up against a more difficult situation when it comes to applying our knowledge on as wide a scale as we wish we could. The fact is, that despite our ability to prevent and correct eye defects, large sections of the people of this country do not get the eye care they need. All sorts of surveys on the subject have been conducted, and while their results vary considerably depending upon such factors as age, occupation, and economic status, they all indicate that the prevalence of eye defects is much greater than we formerly suspected. Summing up the findings of these surveys we may safely say that about one-fourth of the people under 20 years of age have defective vision; almost one-half of the people under 40 are in the same category; while about 95 per cent of persons over 60 suffer from such defects.

But most significant of all is the fact that only about one-half of this large segment of the population who need visual correction ever see an optometrist or other eye specialist. Nor is the lack of attention restricted to those in the lower income groups. The Committee on the Costs of Medical Care which was appointed by President Hoover some years ago reported that "There is strong evidence . . . that care of the eyes is inadequate in all income classes, and is grossly inadequate among persons in families with less than $10,000 yearly income . . ."

This unfortunate situation has been brought home to us most forcibly recently by the revelation that *almost one-fourth of the men who registered for military service under the Selective Service Act had to be rejected* because their vision did not measure up to army standards. And these men, it must be remembered, were in the very prime of life.

I don't have to dwell here on the results of such widespread visual deficiency and lack of eye care. There can be no question as to the detrimental effect on the health, safety, and productive capacity of our nation. You are all concerned with the subject of industrial safety, and you all know that accidents on the job cost us an astronomical sum each year. The cost of industrial accidents which are due to fatigue alone has been estimated by authorities to be two billion dollars annually, and you all know that the inability to see properly is one of the most important causes of fatigue.

Then we have the appalling death, misery, and waste which is caused by motor accidents. Each year more than 30,000 people lose their lives on our highways and crowded streets, and approximately a quarter of a million are injured. Evidence shows that about 15

per cent of this toll is directly due to faulty eyesight, and could be avoided if the faults were corrected. Improved automotive lighting would likewise decrease the accident rate, for it is significant that more than one-half of all auto accidents occur at night while less than one-quarter of the total traffic is moving.

Even in the comparative safety of the home, fatal and disabling accidents claim large numbers of victims. According to the National Safety Council, there were four and three-quarter millions of home accidents in America during the year 1940, 32,500 of them fatal. Out of this total, 16,000 deaths were due to falls, most of them on stairways and steps. Here again, defective eyesight and inadequate illumination play a very direct and major role.

Now, what are we optometrists doing to meet this problem of the lack of eye care?

Each one of us is, of course, doing what he can as an individual in the course of his normal practice. But individually we can't hope to cope with the problem—it is too big and there are too many factors involved. And this is where the Public Health Bureau of the American Optometric Association comes into the picture.

The Bureau was organized about two years ago to cope with the problem of bringing the optometrist's skill and science to that large part of the public which needs this skilled service and which hasn't been getting it.

So far we have made very definite progress, though the goal is still far ahead.

We have, for example, established contact and working relationships with the various public and private agencies concerned with health, safety, and visual conservation. Out of these contacts has developed a better understanding of both the problems involved and the possible ways of meeting them.

We have made a definite step forward toward making optometric service available to people who could not otherwise afford it. This has been done by the setting up of optometric clinics in cooperation with welfare departments and private welfare and civic agencies. Examinations of large members of the low-income and relief groups have been undertaken, and glasses have been provided free when needed, either by the optometric societies themselves, or by the societies in collaboration with the sponsoring agencies. As an example of this type of activity, I should like to cite the clinics conducted by the Pennsylvania College of Optometry in Philadelphia, where about 27,000 free patients are handled each year and about 3,000 pairs of eyeglasses are furnished annually without charge. Equally impressive is the record of the clinic of the Northern Illinois College of Optometry in Chicago, who day in and day out minister to the needs of the poor.

We have engaged in similar collaboration with school authorities throughout the country, because we realize the crucial importance of discovering and correcting visual defects at an early age. We have gone into the schools, given the youngsters screening tests and complete refractions, and, when parents have been unable to pay for corrective glasses, have provided them without charge or at greatly reduced cost. In this work we have had the cooperation and financial assistance of local groups such as Lions and Kiwanis clubs, as well as optical manufacturing companies.

We have also turned our attention to making the streets and highways safer for motorist and pedestrian. Our Highway Safety Committees are working in conjunction with the Motor Police and Highway Safety Bureaus of many states. In many places we have developed and put into practice visual tests for applicants for drivers' licenses; tests which are much more thorough and scientific than any previously in use. In many instances, in order to do this we actually had to design and construct special testing equipment which would give us the required data.

But our main emphasis, especially in the last six months, has been on eye conservation in industry. Actually, we have been engaged in this field for a number of years, but with the defense program now demanding the utmost in industrial production and efficiency we felt that it was necessary to go ahead with this phase of our activity on a much greater scale. Therefore, we inaugurated the A.O.A.'s Eyesight Defense Program.

As a means of setting this program in motion we issued a brochure entitled "Danger—Men At Work!". It is designed to make employers and employees eye-conscious—to make them realize the stake they have in safety precautions, proper lighting, and the correction of visual defects. Beyond its initial printing, we have had requests to date for more than 50,000 copies. This program has been enthusiastically received by both industry, unions and the profession.

We suggest to employers and employees that they avail themselves of the facilities of our local public health bureaus in installing eyesight conservation programs in their factories and offices. We have throughout the country some 250 local public health bureaus or committees who are prepared to assist in putting such programs into effect. They will go into any plant at the request of the management, make a survey of the eyesight problems in the plant, and bring in recommendations for increasing visual safety and efficiency.

One thing we stress to employers, besides proper safety measures and illumination, is the advisability of adequate and periodical eye examinations for all employees. The ordinary methods of testing visual acuity, for example, hanging a chart on a wall and asking the patient to read, has little to do with determining visual efficiency, especially *at the working point,* which is what is most important in a factory. In order to determine this, a more thorough analytical procedure is necessary, and it must be conducted by a person who is a trained eyesight specialist.

When an employer can be made to see the desirability of truly adequate tests for his employees, we offer to work out a plan by which all employees can be examined and necessary corrections prescribed and provided at a minimum cost to employer and employee. A number of such plans are in operation in various places in the country, and the results have been extremely gratifying to everyone concerned.

An example of such a program in operation is the one which is in effect in the Thermoid Rubber Company at Trenton, New Jersey. This concern employs a safety engineer, a nurse, a physician, and an optometrist, and it has a truly impressive safety record. In a six-month period after the installation of its safety program, the company completed 1,100,000 consecutive man-hours of work without a single lost-time accident. Before this, the record was but 350,000 man-hours.

In another instance, a California company reduced its compensation and medical charges from $12.50 to $1.96 per man per year by instituting a visual survey and putting a safety and visual conservation program into effect.

I could cite other such instances if time permitted. But they are sufficient

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The March of Modern Kitchens

From a Report

By W. H. Sammis
Chairman, Modern Kitchen Bureau

Presented at the Eighth Annual Sales Conference, Edison Electric Institute, Chicago, March 31 - April 1

THE March of Modern Kitchens continues on the double-quick, said W. H. Sammis, Modern Kitchen Bureau Chairman, to the General Sessions, Eighth Annual Sales Conference, E.E.I. Speculative builders, municipal and private housing projects, Federal low-cost housing projects are all specifying modern all-electric kitchens. Whether the builder's prime purpose is to improve living conditions for the under-privileged, or to give customers a new feature that means quick sale of houses, the all-electric kitchen is now the accepted method.

Seventeen slides of realty developments and housing projects were shown by Mr. Sammis to illustrate his theme. Wyvernwood Housing Project, Los Angeles, with 1,100 units, 80 per cent of them equipped with all-electric kitchens . . . a 47 house development in Omaha, all with electric kitchens, and erected by one speculative builder . . . 100 homes in Kansas City built by one company, with all-electric kitchens . . . a Federal Slum Clearance project in Indianapolis, 748 apartments with all-electric kitchens . . . a 208 apartment housing project in Philadelphia, all with electric kitchens . . . and 300 homes in St. Petersburg, Florida, put up by one builder and equipped with all-electric kitchens, were among those shown.

"We wrote to about 35 utilities, hoping to obtain perhaps 10 illustrations. We received about 60, and these photographs with detailed information are on display for your inspection," said Mr. Sammis.

Women have for long been interested in the time and work saving features of planned kitchens, he said. To capitalize on this interest, to make the modern kitchen an all-electric kitchen and to coordinate the efforts of utility, manufacturer and dealer towards this end, The Modern Kitchen Bureau was organized in 1936.

The result?

The kitchen today is almost invariably the most modern and best equipped room in the home—the room in which women are most interested, says the *Ladies' Home Journal*. The kitchen has taken the place of the bathroom as the room which sells the home, say architects, builders and womens' magazines.

"The electrical industry's job is to make these kitchens all-electric kitchens! A good job has just been started. Reports on the kitchen planning activities of utilities in various sections of the country show that kitchen planning *does* sell appliances," said Mr. Sammis and cited the experiences of four utilities during 1940.

A 100,000 meter division of Pacific Gas & Electric Company prepared 270 kitchen plans and sold 110 complete electric kitchens. Of the other 160 plans, all were accepted in part. 445 major appliances were sold.

Kansas Gas and Electric Company, 62,000 meters, prepared 115 plans, sold 46 complete electric kitchens. Of the other 69 plans, 50 resulted in the sale of one or more major appliances. 121 major appliances with an approximate dollar value of $14,000 were sold.

Pennsylvania Power & Light Company, 350,000 meters, prepared 620 plans and sold 145 complete electric kitchens, 134 in part, for a total of 434 major appliances sold.

Georgia Power Company prepared 282 plans, sold 105 complete electric kitchens and an additional 146 plans were accepted in part.

At this point, Mr. Sammis introduced B. L. England, Commercial Manager, Atlantic City Electric Company, who briefly described his company's kitchen planning activities.

Everyone in our sales and home service forces is trained to render kitchen planning advice, said Mr. England. Dealers in our territory are equipped to prepare kitchen plans and sell the complete kitchen.

Nine model kitchens are on display in company offices. Forty dealers display modern electric kitchens.

Our salesmen mention kitchen modernization to prospects whenever possible. Our home service director gives kitchen planning lectures to civic groups.

We prepared 211 plans in 1940, from which 134 complete electric kitchens were sold. In these 134 kitchens, there were 134 electric ranges, 134 electric refrigerators, 62 water heaters and 25 dishwashers, Mr. England said.

Mr. Sammis next presented R. I. Seymour, Advertising Manager, Kansas City Power & Light Company, who gave the high spots of his company's work on kitchen planning.

Our Kitchen Planning Department has done a good deal of work in convincing speculative builders in Kansas City that an all-electric kitchen is almost as necessary as a modern bathroom in a salable home. The company offers $100 per home for advertising, featuring the kitchen, to all speculative builders. One builder alone has sold over 100 electric kitchen homes through this cooperative advertising plan. Eight other builders feature electric kitchens in advertising.

"Dealers too are successfully using kitchen planning as a sales approach," said Mr. Sammis, and presented Mr. Gettles of the Hilgedoff Hardware Company, Milwaukee, to describe the work his company is doing.

Complete kitchens can be sold by the dealer equipped with training and experience, working in cooperation with the utility, said Mr. Gettles. His organization maintains its own drafting talent, submitting detailed plans and sketches. Several types of kitchens are always on display.

Mr. Gettles mentioned one kitchen costing $2,400, that was installed in a home valued at $400!

Turning to the market for modern kitchens, Mr. Sammis said, "We're now in the midst of a bigger building boom than back in the days of 1929. There were 545,000 new houses built in 1940, as compared with 509,000 in 1929. It is estimated that 650,000 new houses will be built in 1941. Every one of these houses will need a kitchen. It is our job to get in there with both feet

and get the entire electric kitchen by one fell swoop instead of piece by piece."

In these new homes the problem of financing is much easier, said Mr. Sammis, as most of the kitchen equipment can be included in the F.H.A. loan and amortized over a period of 20 or 25 years. On that basis a modern electric kitchen adds but a few cents a day to the payments. And, with an electric kitchen, the house will not be obsolete in a few years.

One natural doubt which we might have about the new housing business, he stated, is the effect which war might have. The *American Builder*, as quoted by Mr. Sammis, says "Not since 1928 have builders in the residential field had such good prospects for an active and busy year. . . . The remarkable fact about the large volume of residential building that went ahead in 1940 is that it was apparently unaffected by war, blitzkrieg, the election and economic uncertainty. These 545,000 homes were built by people in small towns as well as large cities, by rich and poor, despite all uncertainties."

The market for modern electric kitchens in the modernization of old homes is large too, said Mr. Sammis, quoting the *American Builder* to the effect that census figures show a real housing shortage in many cities, which exert a large stimulus on modernization. F.H.A. made 570,000 modernization loans in the first 10½ months of 1940, totaling $240,000,000. The amount spent on modernization, repairs and improvements to all kinds of structures for the country as a whole during 1941 will approach a billion dollars, it is indicated.

The farm market for modern kitchens, Mr. Sammis said, has increased with the jump in farm income from $8,080,000,000 in 1938 to $9,120,000,000 in 1940. Farmers are used to spending money in fairly large sums for equipment, and are also used to financing through their local bankers or the F.H.A.

"If anybody needs an all-electric kitchen, it's the farmer's wife. You can't pitch hay on a diet of cream-puffs, so Mrs. Farmer has plenty of good substantial cooking to do. Her feet, too, get tired and she needs more hot water. She has more dishes to wash than the average city housewife," said Mr. Sammis.

Dramatic skits were introduced by Mr. Sammis to show methods of selling planned kitchens before and after The Modern Kitchen Bureau's advent. The "stopper" ability of a modern kitchen when used for display purposes, the ease with which a refrigerator prospect can be led to think of modernizing her entire kitchen and the low cost of a planned, all-electric kitchen were dramatized by professional talent.

Mr. Sammis concluded his presentation with a brief description of the sound-slide sales training films to be made available by the Bureau. Five films will cover basic sales training, and other films will cover the major load-building appliances, range, refrigerator, water heater, roaster and laundry equipment.

The full color talking motion picture on modern kitchens, a new Modern Kitchen Bureau promotion, will be ready in just a few weeks, Mr. Sammis said. Scenes showing the intensive work in preparation for the picture were shown to the audience. Available on either a rental or outright purchase basis, the picture will be priced as low as possible to insure widespread use and will come with a complete kit of suggestions for its most effective promotion and use.

"Let's make 1941 the biggest electric kitchen year we've ever had," Mr. Sammis concluded.

Danger—Men at Work

(*Continued from page* 142)

to indicate that good eyesight in a plant is good business.

For years the National Better Light-Better Sight Bureau has been doing a splendid job of public education. In this respect you have gone further than we optometrists. I believe, however, that we are now forging ahead in this field, too. The work of our public health bureaus is beginning to bear fruit in a wider recognition of the tremendous importance of eyesight in every phase of living, and with this increased recognition there will be an ever-growing appreciation of the services offered by the safety man, the illumination expert, and the eyesight specialist.

My presence today on your program indicates one way for both our organizations to work closer together. Our national bureau will distribute a bulletin to our forty-eight state Optometric Public Health Bureaus as well as our 250 local bureaus throughout the country strongly recommending:

First: At each of their local and state meetings a representative of the National Better Light-Better Sight Bureau be invited to report on their activities in the field of public education.

Second: Wherever eyesight surveys are undertaken in industries that consultation be sought with the illumination engineers of your bureau for simultaneous survey of the existing plant illumination.

Third: Wherever eye examinations in schools are carried out that similar illumination surveys be made in order that the "seeing problem" be cared for as it should, under the slogan "Better Light-Better Sight to Normally Corrected Eyes."

In addition, we shall make available to your own national and local bureaus the names of the directors of our state and local bureaus. These men, experienced in Public Health work, will be willing to cooperate in any projects relating to vision that you may initiate.

Our bureau, too, will be pleased to pass on the technical accuracy of material you are preparing for public distribution relating to vision, just as we propose to submit to you material we are now preparing relating to proper illumination. We propose to put all your key men on our mailing list that they may follow in detail our program of Public Health Optometry.

The aims and purposes of our organizations are the same. We are both mobilized to bring better vision to the people of America. This being so, it follows that we can be of considerable service and assistance to each other. Let us each utilize the other's special knowledge and experience for the fuller realization of our common purpose.

American Standards for 1941

THE American Standards Association has published a new List of American Standards for 1941.

More than 400 American Standards are listed, covering definitions, technical terms, specifications for metals and other materials, methods of test for the finished product, dimensions, safety provisions for use of machinery, and methods of work. They reach into every important engineering field and serve as a basis for many municipal, state, and federal regulations.

This List of American Standards for 1941 will be sent free of charge to anyone interested in the work. Requests should be addressed to the American Standards Association, 29 West Thirty-ninth Street, New York, N. Y.

The Re-Wiring of Commercial Establishments

By O. R. Doerr

Chairman, Executive Committee, Northern California Electrical Bureau

An address before the Eighth Annual Sales Conference, Edison Electric Institute, Chicago, March 31-April 3

COMPARATIVELY speaking, little has yet been done in the matter of rewiring of commercial establishments and this bottleneck still stems the tide of lighting and electrical modernization in thousands of commercial buildings throughout this land. Right now is an ideal time for more action.

Last fall, before the International Association of Electrical Leagues at their Convention in Chicago, a report was made on the operation of the Northern California Electrical Bureau, which is dedicated to the removal of the commercial building wiring bottleneck in that area. That discussion was confined largely to the results of the first year's operation of the Bureau. I want to bring that story up-to-date, i.e., cover the results of two years' work, from the inception of the activity in the spring of 1939 to March 15, 1941.

Since the Pacific Gas and Electric Company is the sole sponsoring utility member, the territory in which the Bureau is authorized to function coincides with the P.G.&E. territory of service. This, briefly, is 89,000 square miles in 46 counties of Northern California—from Bakersfield and San Luis Obispo on the south to practically the Oregon line on the north.

One of the major problems was the difficulty in working such a vast area. It was decided to tackle the job piecemeal and concentrate effort for the first two years almost entirely in San Francisco, with only high-spot coverage of certain buildings in nearby cities. This plan has been followed and is one of the important reasons for such success as has been achieved. This discussion is therefore concerned with San Francisco alone as the scene of the Bureau's Commercial Building Wiring Modernization activity of the past two years.

MR. DOERR

Figure 1 presents a summary of the program. Figure 2 offers a comparison of the building area modernized to March 15. Figure 3 recapitulates building modernization expenditures in labor and materials.

It was necessary to develop as we went along the proper selling approach and use every possible benefit we could think of. One angle would appeal to one operator but would make no impression on another. The most successful selling points we have used are the following:

ADEQUATE WIRING HELPS YOU BY:

1. Holding tenants.
2. Making it easier to lease space.
3. Increasing occupancy of your building.
4. Allowing you to meet competition (and competition is a *real* bugbear).
5. Increasing return from higher rents.
6. Increasing valuation of property.
7. Reducing losses (through vacancy, energy losses, etc.).

To discuss some of these benefit points very briefly:

(1) Almost all building managers will readily admit that good lighting made possible by adequate wiring might aid in holding tenants.

(2) Most assuredly space is easier to lease. This has been the experience of every building that has modernized, without exception.

(3) Several buildings in our territory offer proof of increased occupance through electrical modernization. One large building manager is responsible for the statement that vacancy has reduced from 60 per cent down to 20 per cent as the result of relighting and rewiring.

(4) Modernization is the only means of meeting competition. Good lighting ranks second in importance in leasing space, according to several building managers and leasing agents. Many buildings have reached the point of diminishing returns. They have only two alternatives, either to meet competition by modernization, or let the building further depreciate and then tear it down and make way for progress. We found that the average building operator is very much aware of his competition. As the number of rewired buildings in-

Modernization Program Summary

2,023 - Calls
159 - Properties
$647,800 - Completed and Underway
$ 97,000 - Pending
$292,000 - Active Prospects

Fig. 1—Summary of modernization program.

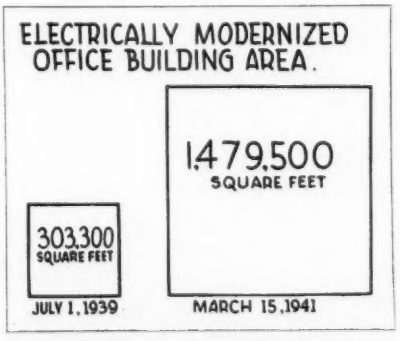


Fig. 2—Before and after comparison of building area modernized.

LABOR	27.2%	$176,000.00
MATERIALS	72.8%	471,800.00
Conduit	15.5%	$ 73,100
Wire	14.3%	67,400
Wiring Devices	13.1%	61,900
Panelboards	7.7%	36,350
Switchboards	9.0%	42,400
Fixtures	37.7%	177,900
Lamps	2.7%	12,750
TOTAL		$647,800.00

Fig. 3—Recapitulation in percentage and dollars of the Building Modernization Expenditure to March 15, 1941.

creased, this fear of competition became a potent selling factor for us.

(5) Where properly lighted space will bring higher rents, the problem of financing electrical modernization is not a difficult one. Some building managers claim that because of economic and competitive conditions they cannot increase rents. However, a number of San Francisco office buildings have been able to increase rents ranging from 20 per cent up to 100 per cent. In the average office building, an increase in rent of only 1.5 cents per square foot per month will amortize electrical modernization cost in a reasonable period of time and pay the additional operating cost as well.

(6) Increase in the valuation of a property is an important consideration with many buildings bordering on obsolescence. One local building owner claims to have increased valuation of his property by $100,000 as the result of an expenditure of $40,000 for modernization.

(7) It goes without saying that losses are high where wiring is overloaded. These losses are hard to evaluate and it is difficult to convince a manager that they may be costing him a lot of money, but he *can* understand losses due to vacancies. This loss through inadequate wiring was a tough one to "get over." We did not get very far with this argument until our engineer developed the Adequate Wiring Demonstration Kit shown in Figure 4.

I advise anyone promoting this type of business to have in mind all the factors involved in the evaluation for a building owner of the results to be expected from an investment in adequate wiring. These include:

a. Original cost of the building.
b. Age of the property.
c. Presently contemplated life.
d. Present valuation for taxes.
e. Present occupancy.
f. Present rental rates and return.
g. Cost of proposed electrical modernization.
h. Valuation for taxes after modernization.
i. Period of amortization of improvements.
j. Proposed rental rates after modernization —and anticipated return.
k. Return on investment before modernization.
l. Estimated return on investment after modernization.
m. Return on the modernization investment itself.
n. The above reduced to a common denominator on a per-square-foot basis.

I am unable to judge whether the results of our program constitute a good job or not, because I am unable to find any similar operation with which to make comparisons. The fact is, however, that the several branches of the industry which underwrite the activity are well pleased with their investment and the returns received therefrom. This, perhaps, is the best test of such an undertaking.

Fig. 4—Adequate Wiring Demonstration Kit

The results accomplished are due to several very obvious factors, chief of which is singleness of objective and concentration of effort. I mentioned that the operations were confined to one city, San Francisco. Effort was further concentrated on the approximately 200 large office buildings to start with and work will be continued on these irrespective of results for at least a two-year period. This was a wise move because it required most of six months to work up possibilities, build up interest, and secure a few jobs. After this initial period results have been forthcoming rather consistently.

The revival of this activity was first suggested in the fall of 1938 when the supply business was none too brisk and contractors were hard put to keep their men busy. All branches of the industry, consequently, were anxious to see this reservoir of volume business opened up. Furthermore, they were willing to back up their desires with money. The Pacific Gas and Electric Company offered to carry on a magazine advertising program to invite dealer participation and reach selected customer groups, such as builders of new homes and certain professional people, in addition to contributing to the general promotional fund.

To direct the operations of the Bureau, an Advisory Committee was organized, composed of four to five representatives from each of the following industry branches: contractors-dealers, wholesalers, manufacturers, utility, members-at-large and regional members. From this controlling group, and by them, an Executive Committee of eight was elected. The Executive Committee conducts the affairs of the Bureau for the responsible Advisory Committee.

Field operations and the work of the Bureau are performed by a staff comprising a working manager, an industrial engineer, an educational director and a secretary.

The industrial engineer, with part-time activity by the manager, devotes full time to building modernization. The educational director devotes his

(*Continued on page* 150)

A Dealer's Viewpoint On Utility-Dealer Selling

By Joseph T. Meek

Director, Illinois Federation of Retail Associations

An address before the Eighth Annual Sales Conference, Edison Electric Institute, Chicago, March 31-April 3

IT has always been my understanding that the interest of the utility company in the sale of equipment and appliances has been to increase the use of the current supplied. I believe this, I have always believed it, and I do not propose to let any unethical merchandising practices of some utilities, if there be such, shake my belief.

No thinking retailer will say that the utility industry, as such, has not developed sales and profits for retailing. Out of the minds of the geniuses in your industry have come appliances new and startling to the business world. It is not such a far cry from the days of kerosene lamps and cumbersome hand manipulated washing machines.

The world of today, to the housewife, has no comparison with the world of yesterday . . . and for that change we have the pioneers in the utility sales world to thank.

Even now, when we feel that there is little under the sun to be discovered, we know that new and even more startling inventions will come along, the workings of which will be a mystery to the retail merchant engrossed in selling merchandise and not in experimenting.

Thus the day will always be when utilities will be in the merchandising business. There is no question but what consumer acceptance of electrical appliances can be traced to the original splendid promotion that was put on by the various utilities, and they deserve a world of credit for a job well done. However, lest the laurel wreath rest too heavily, may we add that it was a selfish motive, because these same utilities wanted, and still want, to sell current.

Today consumption of current has reached a point where, apparently, it is difficult to differentiate between merchandising for a profit and load-building for an increase in volume because the increased volume naturally increases the net profit due to the surplus energy available when unused.

In other words, the utilities, some of them, are marching right in to that

MR. MEEK

"profitless prosperity" which has been more or less of a bug-a-boo with all of us for some time.

Whereas the utility companies were once interested in perfecting every available device for increasing the load and building it up to consumer acceptance through retail selling, they now must give much more consideration not only to the selling of merchandise, but to the *profitable* selling of such merchandise.

There are two points I would like to make: First, no thinking merchant wants to drive you out of the selling business. Second, he does, however, want you to do that selling on a profitable basis and not on a basis that actually sets up ruinous competition for him . . . and, incidentally, yourself.

Don't get the idea that you are Main Bug-A-Boo Number One for the retailer. There are lots of folks outside of the utility industry who get the idea that it is fun to sell blindly, cut prices, stoop to any tactics to build volume . . . and it doesn't have to be current volume . . . and certain elements in the utility business just happen to be among these.

This happens to be a period when that blind type of selling won't get you any place. Even those in the highest places have seen the idiocy and costliness of such a procedure.

If the company you represent wants to build a load through the merchandising of appliances, I, personally, and the 37,000 merchants I represent, won't stop you. But you will notice I said "merchandising." We will get our backs up and fight mighty hard to prevent you from building your load without any semblance of "merchandising," as we will fight a lot of folks outside the utility industry who sell blindly. We welcome you in the merchandising business, as we have in the past, providing you really sell your merchandise . . . just as all sane merchandisers welcome all units who sell on an honest, scientific basis.

Please remember that your primary purpose is to build load through merchandising of appliances, and that this load building depends, to a greater extent than many utility folks think, on the ability of the retail merchants of this country! Anything that is done to sacrifice that loyalty, and that cooperation, is going to materially affect the load building of the utility concerns.

Oftentimes the procedure of utilities does not invite this loyalty. Yet I have always felt that the utility company should, in many ways, rival the progressive advertising and sales departments of a great manufacturing concern intent on securing public adoption of "Wheaties," "Non-Splash Grapefruit," or any other commodity that depends on nation-wide consumer acceptance for success. The manufacturing concern sells the product with all its might. But it goes out of its way to develop dealer cooperation so that all hands will press the product day in and day out.

The utility merchandising programs present a definite analogy. You have current, not "Non-Splash Grapefruit," to sell. You do the best and most profitable selling job you can to sell that current, and more power to you. But don't forget the thousands of dealers who are selling the current for you . . . and who can do a real job of selling it, too.

In some sections utilities are doing just that. I presume that a dealer-cooperation program is what you are working on, as well as many others. It pays only so long as you play fair with the dealer, who incidentally, also recognizes his faults of omission and commission and doesn't register under the "lily-pure" banner all of the time, by a long shot!

But there are two things I want to warn you about: First, just don't sell to be selling. If you are going into the merchandising of appliances, go into it on a merchandising basis. Develop men who merchandise on a profit basis. Regard load building as a merchandising business and build some grave concern over how profitable or unprofitable that business is. One of the chief criticisms of some utilities in merchandising is that they are, frankly, "dumb" in their merchandising policies, care little about losing their shirts in every day selling just so long as they can shrug that loss over into the operations end of the business . . . or in some way chalk it up to "load building." Oh, I know that this practice has been pretty well refuted, but ignorant merchandising procedure always invites it. There are many cases, on the other hand, where the local utility manager understands retailing and maintains adequate margins and fair sales policies and works with the retailer. It would seem to me that if you studied such cases, and they are plentiful, you would readily realize that it is possible to operate this way at a better profit and with a common objective . . . load building . . . in mind.

We must admit that there are still many cases where the independent does not carry stock that is adequate and is not aggressive in his selling methods. In these cases, utility neglect of retail intertests possibly cannot be blamed. However, is it not worth the thought, to try and spend some of this promotional expense in educating and selling dealers on the idea? Perhaps, in many cases, the dealers are aloof or inactive because of the type of competition the utilities themselves have set up. But whenever a utility, through mismanagement or misunderstanding of retail procedure, forces a price which a retailer must meet to get volume, a price which, on account of the narrow margin, throws the retailer just off the line of a profit maker, the utility is not only hurting any possible retail cooperation, destroying the possibilities of having prosperous retailers as allies, but he is also adding to the sum total of losses in his own merchandising business. The United States average of business experiences shows the "profit makers" in each line operating on a very, very narrow margin. The margin is narrow and the slightest bit of "out of the line" selling is going to hurt, and hurt badly.

Second, the next thing I should like to ask you to do, after you determine to expand your merchandising program with the aid of the dealer himself, is to refrain from those practices which invite severe censorship. Refraining from these practices will also build your own profit margin and make you an appliance dealer in every sense of the word. These practices were reported by retailers who will quickly concede that the main interest of the executive head of the utility is to sell electric current and gas; and that he is not interested in the sale of merchandise except as it adds to the consumption of the product they have to sell. These retailers recognize that not all of them are doing a good job on appliances, and that in such localities no blame can be placed on the utility for being in the merchandising business.

I hope I have been able to picture to you a retail world not gnashing its teeth and tearing its hair at all utilities, nor at utilities in merchandising to build up their loads.

Many retailers are benefiting from dealer promotion plans who would not know what to do without them. A number have stated to me that the utility competition was the cleanest they had.

But the world is not full of roses. I might say, definitely, that certain utilities are fostering practices, or at least permitting them to be carried out, which are not fair, which are short-sighted, but which can be eliminated if the utilities will find a way in each locality to cooperate with the retailers.

My files are full of specific instances of utility companies that have not kept faith with their fellow utilities in cleaning their own house.

What are these basic complaints? Before I list them, may I cite a situation not too uncommon, unfortunately, in this and other states?

I am speaking before an audience of 100 of the best grade of furniture dealers. After my own address I sit and listen to the remainder of the program. The free-for-all discussion invariably gets around to the problems of the retailer. One of the merchants present gets to his feet and, because he is among friends, he cites with some profanity a case wherein he has been attempting to sell gas ranges at a certain price which is the fair list price, and the local utility company, right at the peak season, has advertised the sales of these ranges at a price even under the buying price of the dealer. Other retailers cite similar instances and the room is full of acrimonious charges against utilities and their merchandising practices.

Because I like fair play, I start to run down these statements and secure proof. Thus I slowly accumulate a storehouse of complaints against certain practices. I should like to make it plain that the following are verbatim complaints or alleged grievances that have filtered through to me from retail sources. Here are some common criticisms by many dealers of utilities' merchandising methods:

1. Mark-ups or pricing which the dealer cannot approach. "In this respect there are numerous instances of utilities selling lamps for $9.95 which would normally have to be sold by the dealer for $13.50 if he were to stay in business."

2. They have sales terms which commercial financing companies cannot meet. "This even includes smaller appliances which are not even financed by commercial financing companies at all." Why not offer dealers some plan to sell small appliances for you?

Such advertisements as I.E.S. lamps for $3.45 with a down payment of as little as 45c are reported as typical. We also have on record the statement that "utilities in a certain territory advertise no down payments and 15c per day on $200 deals. This is a complaint voiced over and over again. And, easily the biggest bone of contention is the payment of a bill for merchandising appliances on the light or gas bill. Why not separate them? Such a separation would help your relations with retailing tremendously . . . and would, I think, build a more sound credit relationship as well.

3. Trade-ins higher than the dealer can normally allow and still make a profit. This trade-in policy is frequently not a policy of the company, but rather the work of an individual salesman who is willing to sacrifice part of his commission in order to make a sale. However, this is not always true. Some comments are: "trade-ins so high we cannot touch them"; "trade-ins sometimes

amount to the entire amount of margin for junk"; "we cannot meet this and stay in business." Still others are: "allow $15.00 on any coal range or oil stove and let customer keep old appliance"; "advance regular price $15.00 allowing for trade-in, and if this doesn't sell the sky is the limit."

4. Aggressive selling of appliances has wide public acceptance. I have said that the far-sighted dealer does not ordinarily recommend that the utility companies go out of the merchandising business. However, he does find it difficult to understand why such publicly accepted articles as washers, gas ranges, and vacuum cleaners should be sold by the utility companies when much of this equipment goes into the replacement market. Commonly used articles, small appliances, and lamp bulbs are also listed in this category.

In this connection the Mazda lamp bulb question is large and difficult to handle. It is one of the most important activities in maintaining lighting load. I want to cite to you percentage figures of the empty sockets. It is known that there are 10 per cent to 25 per cent empty sockets in every home today, and the problem is to keep those empty sockets filled. One might, therefore, definitely recommend companies to hold Mazda lamp bulb activities. However, managers should advise the dealers thirty days in advance of activities so that they can arrange to trim their windows. The Commonwealth Edison Company maintains a free renewal lamp crew consisting of four or five men. It is the duty of this lamp crew to go to every home, make an inspection of the sockets, and fill the empty sockets with free lamps. They find that 13 per cent of the customer's sockets are empty. By empty, I mean burnt out lamps or no lamps in the sockets. And still we look upon lamps as bread and butter or sugar items . . . everyday purchases.

We have noted that utilities are in this business, partly because of retail shortcomings and for other reasons. Yet that should not give the utility the right to conduct this business except only in the most fair, constructive, and widely accepted competitive procedure. After all, there are many retailers who have no particular "shortcomings" as merchants.

A major complaint from dealers is the trial installation of refrigerators; the use of advertising and of a sales force all out of proportion; instances where customers have been charged for putting in meters when appliances were not bought from the utility company.

5. Another complaint is knocking the dealer's product by the utility sales or servicing people. This doesn't seem to be a definite company policy, but the result of a drive for load building which has the born salesmen overly excited in the quest for merchandising sales results.

I believe we've listed enough items of complaint. There are, of course, many more of them, and some of them obviously not fair to either the utility or the retailer. However, here are a few general comments, all from retailers well known and respected in their associations:

1. Five or six farmers getting electrification wanted to buy refrigerators. The .... shipped them all to one farmer as a dealer and they got 30% off.
2. Refrigerators are installed in homes under no obligations to buy.
3. Advertisements are sent at no cost, with all light bills. Dealer must meet this cost.
4. Sales force and maintenance not charged to proper operating cost.
5. A contract is being used where the minimum charge per month is two dollars less if appliances are bought of the company rather than of a dealer.
6. In sales in a community of about 1500, where the dealer handles a representative line, the utility averages 3 to 1 on ranges and water heaters. We believe that the salesmen for the utilities used service talk and terms to outsell the dealer.
7. "We find the commission paid by utilities much higher than we can pay and stay in business. The company apparently expects no profit."

The utility is a business. Retailing is a business. Both must prosper through the sale of their product. The one can, and must, help the other to develop profits, to eliminate waste, to fight those who would like to remove the profit motive in business entirely.

You will not be censored by most retailers if you remain actively in the merchandising business. All you have to do is to polish up a bit on that Golden Rule which says that "you must do unto others as you would have them do unto you." For many years utilities have complained about government interference with their business policies and practices . . . and I have helped them to do the complaining in the firm realization that private utility business is infinitely less costly and more productive than municipally owned and government controlled utilities.

All you have asked is fair competition and aggressive competition. That, gentlemen, is all that retailing asks. Retailing wants fair competition and aggressive selling on a fair basis, wherein the consuming public would receive their merchandise at the lowest possible cost. But if the utilities "dump" just to build loads . . . and thereby harm their own merchandising business which they are definitely in . . . and if the utilities dominate and dictate certain policies wherein retailing must conform, then that same retailing will resent domination, dictatorship, and wasteful selling.

The trend, legislatively, is toward the ending of price cutting legislation. Recently Fair Trade legislation has come into being to permit retailer and manufacturer to control a price to the detriment of the price-cutter and the market-wrecker. This legislation has worked surprisingly well, particularly in the appliance field where "where can I buy it wholesale" has been the cry of the public.

You, I believe, want to set up certain yardsticks for the use of your companies in maintaining good business relations with dealers, yet at the same time in developing profitable merchandising of your own lines because of the necessity of building the current load.

The first of these is to remember always that your primary purpose is to build a load at a profit.

The second is that you can always build that load at the cheapest cost by having as many profit making "salesmen" as possible . . . meaning the progressive, aggressive, cooperative retailer.

The third is to abandon any and all practices that are unfair, and unworthy. As a yardstick here, just imagine all the utility practices that you sharply disagree with, and apply the same reasoning to retailing of merchandise . . . there are ethics in both back yards.

The fourth is to sell aggressively on a profit basis. I need not go into a lengthy analysis of how to sell at a profit. You cannot be expected to sell at a profit when you sell below cost, can you? You cannot sell at a profit when you give discounts far from the list price, can you? You cannot expect to build profits on one hand when your excessive trade-in policies defeat that purpose on the other hand, can you? You can't expect to make a profit when your installment policy is so weak as to bring about a costly loss in your credit program. You couldn't expect Marshall Field and Company to make a profit on such a basis, could you? Well, then, why not adopt the profit making yardsticks of any successful company and stick to them?

You'll have to guard yourself against the hysteria of selling just to build the load. You can build load by giving free electric ice boxes to all the families in any city . . . but you certainly cannot operate long on such a basis.

Nor is that example so silly. I've referred, before, to the things that antagonize dealers. It isn't strange that most of these things which antagonize dealers are identically the same as those that destroy your profits!

Why? Because dealers are merchandisers first and foremost. Utilities, if they want to stay in the game and meet the requirements of those who would otherwise bitterly oppose them, must also be merchandisers first and foremost. Merchandisers of current loads on a profit basis.

One last thing. Don't worry about the retailer as long as you sincerely mean to operate on a sound basis and use him in developing your major operation . . . the building of loads.

If you adopt this policy you can conduct your merchandising business in such a way as not only to build loads but also to build merchandising profits. The one without the other is futile and costly.

It is up to the top executives of every utility firm to know what its sales department is doing and what it can expect of it . . . on a profitable merchandising basis. Perhaps if we based our procedure not on the year's record, on a dollar and cents basis, but on a basis of kilowatthours we would get closer to our ideal. But I do plead for an understanding of those sales folks on the firing line. If you press them too hard, and their job is at stake, you can expect them to go to any lengths to get business . . . and get it in a way that will harm you, be costly to you, and detrimental to your good-will policies.

It is entirely possible for the public utility to merchandise appliances and at the same time to promote dealer sales. Some of the requirements of a workable plan are:

1. A strict adherence to conservative merchandising policies, which include:

a. Mark-ups, sales terms, and financing terms, which the dealer can meet and profitably emulate. (As a rule the utility buys at a more favorable price than the smaller dealer. Its markup should therefore be high enough to prevent underselling the dealer. The dealer can only offer the terms available through a financing company. The utility should offer no more favorable terms with respect to carrying charges and maximum number of installments.

b. Judicious purchasing which will eliminate frequent clearance sales at prices the dealer cannot begin to meet.

2. A re-arrangement of the utility salesmen's commission schedule which will:

a. Encourage him to sell appliances the company wants sold (instead of those which he wants to sell, either because of high commission or because they sell readily due to popular demand).

b. Automatically throw the sale of appliances, having general acceptance and high saturation, to the dealer. (Why should the utility continue to push appliances having high saturation when the primary purpose is to build load, not to merchandise in competition with its customers, the dealers?)

c. Continue him in those fields which need pioneering. And that includes the I.E.S. lamp; for the dealer has not yet in many parts of the country assumed the responsibility of pushing these lamps.

d. Encourage the salesman, through payment of attractive commission, to help the dealer sell certain appliances.

3. An advertising and sales promotional program including:

a. Equal prominence for dealers in the company's institutional ads.

b. Direct dealer advertising, editorial copy, mats, window display material for dealers, especially during contests or campaigns.

c. Educational meetings for dealers' personnel.

d. Public and home demonstrations. (The dealer may sell the appliance, but it's of distinct advantage to the utility to help keep it sold.)

We've too much at stake to quarrel with each other. We have a common battle to fight against those who would utterly destroy private enterprise. We cannot afford to be fighting each other. Let's work side by side . . . for a profit!

Rewiring of Commercial Establishments

(*Continued from page* 146)

time to classes on wiring and lighting for groups as follows: Parent-and-Teachers, and educational groups; contractors; journeymen electricians and apprentices; maintenance engineers; certain professional groups; merchants associations and other interested business organizations. The secretary handles, through the office, most of the details incidental to the Bureau's work and is the clearing desk for the Residential Red Seal Adequate Wiring Program handled in the selling end by utility salesmen.

The expenditures by the Bureau, at least 85 per cent of which go for direct promotional work, for this staff and all other costs, are not excessive. In 1939, in round figures (exclusive of advertising) they were $18,000. In 1940 the Budget was $20,000, and this year the program is set up on a basis of $21,000.

Promotion of appliance sales is not a part of the Bureau's function. In Northern California this work is handled by a separate organization. This is probably one reason why approximately 1,500,000 sq. ft. of office building area has thus far been affected. Unquestionably, appliance sales promotion would detract from the activity and greatly dilute the effort because of the trying and difficult nature of the building wiring job.

At the present time—the start of the third year of Bureau work—more than 50 of the 177 large office buildings have made some wiring improvement (including lighting) either in whole or in part. A number of additional buildings are interested, some of them for immediate action. The availability of approximately 1,500,000 sq. ft. of office space with facilties for modern high-intensity lighting has had its effect on less attractive areas which are beginning to "feel the pinch." It is now planned to expand the work to other Northern California cities, with hopes of duplicating the San Francisco experience.

Recently a group of sales executives was discussing the problem confronting sales management with respect to the weakening influence on salesmen of a prolonged sellers market. They were concerned with the morale-destroying effect of easy "sales-sledding" and were reviewing methods and ideas to maintain proper mental balance and alertness for the tough job which my be ahead. If you hold any fears of this sort and want to carry on a toughening project for some of your personnel, here is an exercise to try out.

When business comes easy and ordinary sales demands lighten the strain on our sales forces, is a good time to try some of the neglected and ordinarily hard-to-justify projects which require specialized effort on a long-term basis to produce results. Commercial Building Wiring Modernization is such a job. Right now, when office and store space rentals are improving and when such space may soon be available only at a premium, the owners and operators are more receptive to this type of promotion and actually are in a better position to do something about it, because they are able to defray the not inconsiderable cost involved. Furthermore, the growing consciousness on the part of renters of the need for properly lighted and wired facilities and their more frequent demands for such modern facilities are an important influence toward a successful operation in this field.

What is Our Electrical Manufacturing Industry Going to Do for You?

By Chester H. Lang

Manager, Apparatus Sales, General Electric Company

An address before the Eighth Annual Sales Conference, Edison Electric Institute, Chicago, March 31-April 3, 1941

SOME of you may remember Napoleon's instruction to his secretary: "Do not awake me when you have any good news to communicate; with that there is no hurry. But when you bring bad news, rouse me instantly, for there is not a moment to be lost."

Today there is certainly not a moment to be lost. We are all awake, I think, to the seriousness of our situation, and we will therefore meet that situation as it demands to be met—with direct weapons for winning the fight, of course, but taking good care that soldiering remains only an avocation for an emergency, because wars remain only critical islands in the vast sea of peacetime endeavor.

If I bring any bad news to this gathering, it is truly in the Napoleonic sense—the sense of multiplying and emphasizing the urgency to act, and not in the sense that the battle is lost. As a representative of electrical manufacturing, presumably I am here to answer a question—a question that you have every right to ask—"What is our manufacturing industry going to do for you? Is it going to give you guns—or refrigerators and ranges, motors and lamps, and the hundreds of other products on which your past and your future—and *our* past and *our* future, too—are built.

You can ask the question in some form and in all sincerity, without appearing selfish. The electrical industry is characteristically volatile and sensitive. It was never meant to stand still. When electricity stands still, it dies—the power is shut off. In our common businesses we are constantly building load, and even at the very worst times we are constantly fighting to keep load, but we never stand still. The surging progress of the utility company, like that of any merchant, is fed by a stream of manufactured goods—turbines, toasters, meters, motors—manufactured products that must come from the same plants which have been, and are being, rapidly converted into the arsenals of democracy of which Mr. Roosevelt speaks.

MR. LANG

Since at this session I am the witness for manufacturing, then I must recognize your question as being entirely proper—leaving me no alternative but to attempt an answer to the best of my ability. I concede at once that it is presumptuous indeed for me to speak with authority for all of my own company, much less for the whole industry. Therefore I approach the assignment of your program committee with humility, none the less I shall try to deal forthrightly with their query.

You scarcely need be reminded that ours is a complex industry. It represents more diversity than any other I know of. At once it combines with a wide range of consumer goods, serving vital needs of every man, woman and child in America, a tremendous variety of apparatus ranging from great turbines down through the whole intricate mechanism of electric service to the tiny motor at the end of the line. And with few exceptions, each of these hundreds of products embodies in large degree the discoveries of the scientist, the creative genius of the engineer and the skilled work of the master craftsman. These are characteristics that distinguish this electrical industry of ours.

Then, too, perhaps we should remind ourselves of its magnitude in terms of output. The production of the electrical manufacturing industry had a dollar value in 1940 of $2,750,000,000, having attained that lusty stature from a mere $100,000,000 in 1900. In 1910 its output was $1,000,000,000, whereas in 1933 it slipped back to approximately $700,000,000. This capability of attaining in 1940 four times the output of 1933, has a very hopeful significance in answering your question. This is true even after I remind you that approximately $1,000,000,000 of defense orders have already been placed on the electrical manufacturing industry and much more will have to be undertaken. Bear in mind that I say "a hopeful significance" only, because charts and curves may not prove anything. Colonel Donovan who is well qualified to know made this observation with particular reference to the unexpected and gallant performance of the Greeks—"Statistics don't win wars. Valor and determination and a united people do." We might well remember that in the industrial battle which America has undertaken.

Now to your question again. As a matter of fact, I suspect you know pretty well the answer—I mean, the specific one, in respect to what the electrical manufacturing industry is doing for the defense program today and its immediate effect on the flow of non-defense items. And I think you know the more general answer—to me the more interesting one—in respect to what we as an industry must try to do in this crisis.

For the moment, I should like to pass somewhat lightly over the first for the

sake of concentrating on the second. I can tell you—and you already know—that our industry has been called upon to develop and manufacture a more varied assortment of intricate products than any industry in the United States—propulsion turbines, generators, motors and control, reduction gears, auxiliary ship turbines and generators, cable, ordnance and fire control—searchlights, radio receiving and transmitting equipment—turbo-superchargers, impellers, generators, instruments, magnetos, feathering motors, turrets and turret controls for aircraft. Some of these items must be built quickly in quantities never before imagined. Then, too, there are a number of developments about which nothing can be disclosed. This applies particularly to the work of the laboratories out of whose intensive defense activities are bound to flow, as after the last war, from a very much smaller number of such laboratories, many new and valuable inventions—that will mean useful peacetime products and services. You may confidently put great hope for the future in this phase of our wartime program.

Our defense effort today is some two and a half times what it was six months ago in General Electric factories alone; some 500,000 man-hours per week are going into defense work. And while it adds to the complexity of the industry's problem, there is a great deal of satisfaction in observing that in almost every item, unbelievable craftsmanship and skill and exacting science and engineering are needed. In war, as in peacetime, electricity is contributing the elements of control, precision, and power. This is an effort that must not be measured in dollars or tons but rather in brains and skill—tons of brains and skill, by the way.

And incidentally, whence came this "unbelievable craftsmanship and skill and exacting science and engineering," that is the proud possession of the electrical manufacturing industry and which is now being so heavily drawn upon for the defense of our country? It came in large part from the courage and constant urge for better tools and more efficient ways to serve its customers, of this electric light and power industry of yours.

Some of you have seen the old Commonwealth Edison vertical turbine which has stood as a monument to engineering progress on Works Avenue in Schenectady for 32 years.

Who scrapped this first 5000-kw turbine for a bigger and better machine when it was only six years old? Who went on doing just that through the years, thus enabling scientists, engineers and skilled workmen to advance the art of power production, to the end that electricity is now available to nearly every home and factory in the land at continually lower and lower costs? You know and may well be proud that the men of your industry did just that.

What has that to do with defense? Every airplane carrier, battleship, cruiser and destroyer in the United States Navy is propelled by steam turbines originally developed for and proved in your electric light and power industry. In a very just sense it may be said that the Navy owes you a large debt of gratitude for the highly efficient machinery which today drives the battle fleets of the nation.

Seventeen million horse power of turbines are on order from the electrical manufacturing industry to propel and furnish power for over 200 of Uncle Sam's new fighting ships. The "know how" that makes it possible to undertake this tremendous task comes from our long peacetime partnership with you. I hazard the belief that if by chance this job of ours inconveniences you a little, you'll hold out a helping hand and join with us enthusiastically in seeing it through.

But there is a further point at which the defense program touches you most directly, or will in the days to come. This industry has necessarily had to specialize, throughout its life, in developing high-quality manpower—men who could design and make tools, men who could build a high-speed production line for such an intricate mechanism as an electric refrigerator, men who know how to plan and produce—and we have had to give up a goodly number of those men to defense activities. Moreover we have had to give up, in effect, many of the materials and alloys vital to our products. At this moment no one can tell, with any degree of certainty, what effect these sacrifices will have on our normal production of electrical goods.

The president of the General Electric Company—and I'm sure you'll agree he ought to be adequate authority for me—said a couple of days ago that he saw no particular cause for alarm, that he thought we would be able to go on moving out appliances, for instance, at a normal rate, at normal prices, for some time to come. I don't happen to be quite so optimistic, but I think I know what prompted his statement. Every day is a crisis of some kind in the electrical business, as some of you could eloquently testify. After some 40 years in this industry, always in the thick of production and distribution and sales, it is hard for a Charles E. Wilson to imagine that a mere war will pose problems that our manufacturing industry—with your strong help—will be unable to overcome. And on that basis, I heartily agree with him.

We have all heard again and again that this war is not like the last, and believe me it is not. The reason may be a little difficult for Europeans to understand, but in this country we have done what James Whitcomb Riley liked to call a powerful lot of living in the last 20 years. In that, electricity has had a very large part. There never was a time when Americans, in common with a lot of other people, wouldn't go out and fight for those fine old-fashioned ideals of freedom—of conscience, of speech, of assembly, of worship, and the rest. But today we have more than that. Materialistic as it may sound—I think we will fight also for our new way of living—convenience, elimination of drudgery, safety, health, entertainment, the ability to be warm when we want to and cool when we want to, to look younger than we ought to, and to answer to nobody but ourselves for the privilege. Those are the things that are poison to a planned economy, and Americans love 'em.

Let us say that today, in addition to all the old things, we are willing to wage war for a better standard of living. It is precisely at that point we need your help, as purveyors and aggressors.

Let us look, for the moment, on the slightly darker side and assume that it does become necessary for us to make fewer normal products. What will then be your part—our part?

You and we have a tremendous stake in the future and in these circumstances a difficult and trying task for the immediate present in the face of a greatly accelerating consumer demand, backed by new and rapidly increasing buying power. The private utilities of this country have striven over the years to build an electrical consciousness on the part of the public. It is highly important that we defend that consciousness with as much tenacity as we possess. It it relatively easy, I believe, to be patriotic and even heroic, if that is neces-

sary. During the last war a good many of us stepped out to a band, literally or figuratively, and did a creditable war-time job. When it was over we marched back again—back to a disturbed economy, back eventually to unemployment, inflation, speculation, and disillusionment. It took a long time and two major depressions before we got our feet back on the ground, and the cost has been great. There are scars on the face of business and politics that will never be totally eradicated. So it may be that it is not wasted lives and sunken ships and battered cities that we shrink from alone, in facing the new conflict, so much as it is another series of shattering blows to our free enterprise system—and in that again I am being frankly materialistic.

Sure—we can make all of the guns and planes and battleships that may be necessary. But we have a much harder job than that, harder because it is less spectacular. To the best of our ability we must maintain business as usual. To the best of our ability we must replace men and materials, we must keep prices stable, we must take care that we do not destroy either the roots or branches of our strong domestic plant. The greatest challenge to our system will come after the war, when defense production drops, when the camps give up their load of suspended manpower, when the bills begin to come due. At that time we can't afford to begin all over again building up customers and markets. We must keep our channels of distribution open. We must keep the appetite of our customers eager for the solid, demonstrable benefits of electrical living and if necessary explain why we can't deliver today.

The electric kitchen may prove to be more important to our continued existence than a flying fortress and some such service as that represented by the electric sink, with its vast potential market, may easily be a sponsor of the future. I see no reason why we, who make the tools of electrical living, or you, whose job it is to see that they are applied on a wide scale, should abate our efforts just because an emergency exists, or because we may for a limited time, have to wrestle with such difficulties as curtailed production, substitute materials, and the temporary intoxication of increased payrolls.

Braver words were being spoken six months ago—yes, three months ago—about "business as usual" than are being spoken today. With most of us, the wish is often father to the thought. As the magnitude of the job ahead becomes clearer, we are likely at first to be overwhelmed by it. We are frightened. We want leadership. We want someone to take us by the hand and comfort us. Some of us are whistling in the dark to keep up our courage. We want so much to be assured that all will be well—that the things we have cherished and which have made us comforable and "happy" (I have happy in quotes) will be preserved and made secure.

And so when we get together, we're likely to vie with one another in lamenting the trouble we're in, hoping, sometimes rather plaintively, that something will turn up to indicate that it's all just a bad dream—and that in reality all's well with the world again.

Yet we know in our hearts that the overpowering forces—too many of them evil—on the loose in this nice old world of ours make such an outcome, in the narrow sense, seem pretty hopeless; in the broader sense, however, not hopeless, but entirely within our grasp.

So maybe we should get back to your question, "What is our manufacturing industry going to do for you?" It's going to do a job, for you and for our country—the hardest job it ever undertook—but its best talents, its most resourceful ingenuity, its tireless determination, its total energies will be devoted to the task. That commitment I know I may make without reservation for the electrical manufacturing industry.

How and when, you may well ask. When?—Perhaps not quite as soon as you would like or as we would like, but sooner and faster, I predict, than many of you think today.

How?—Not by making speeches such as this. Not by blueprints. Not by statistics. Not even by that currently intriguing word—priorities. Rather by the selfless devotion of every mother's son of us in this great industry to his particular job.

How?—Not by awesome schedules. Mr. Knudsen has paid his respects to schedules as such. Not by kidding ourselve with the billions "on order." Rather by working longer at our benches, our machines, our desks, on *today's* production. Yes, by "toil and sweat," even as a selfish hope that we may thus avoid the "blood and tears," that are the unhappy lot of our brave friends across the sea.

How?—Not by losing precious time in fruitless haggle and debate and recrimination. Rather by admonishing ourselves with those lines of Lord Byron:

"Time that is past thou never
canst recall;
Of time to come thou art not
sure at all;
The present only is within thy
power,
And, therefore, now improve
the present hour."

How?—Not by seeking or waiting for a revelation of all that lies ahead. Rather for most of us, by more of the simple faith of the psalmist—"I ask no prophet ecstacy, no sudden rending of the veil of clay."

May I remind you again of Napoleon's instruction to his secretary?

"Do not awake me when you have any good news to communicate; with that there is no hurry. But when you bring bad news, rouse me instantly, for there is not a moment to be lost."

Have I brought you bad news in response to your question? I am well aware that it leaves much to be desired. But be assured again that the men and women, who are the life blood of this electrical manufacturing industry have been aroused and are not losing a moment in doing this job in which electricity has the greatest single role. In short, they will do their best for our country and for you. You know their character, their patriotism, their abilities, their spirit. Have faith in them. They won't let you down. Our free and democratic way of life must prevail.

"Lighting Sales Tips" New Series of Bulletins

A NEW series of bulletins, designed to aid utility companies in the promotion and sale of lighting, has been inaugurated by the Lighting Sales Committee of Edison Electric Institute. Entitled *Lighting Sales Tips,* the bulletins will contain news of sales plans, promotions and surveys which have been found effective in actual lighting sales operations, as well as general information on the subject.

Issues of *Lighting Sales Tips* will appear from time to time. In order that the bulletins may be as valuable as possible, utility sales departments have been asked to contribute comment, advice and suggestions. Communications should be addressed to Lighting Sales Committee, Edison Electric Institute, 420 Lexington Avenue, New York, N. Y.

The Place of Power Sales in the Picture

By M. E. Skinner

Buffalo, Niagara and Eastern Power Corporation

An address before a Power Sales Session of the Eighth Annual Sales Conference, Edison Electric Institute, Chicago, March 31 - April 3

WHEN I was asked to present the opening paper at this conference I accepted promptly and with a sincere feeling of appreciation for the honor you paid me. This meeting is always an important one but never more so than with conditions throughout the country as they are today. Sensing this importance, I have given considerable thought to what I should say. As I looked over the program I realized that your day to day problems would be adequately dealt with by experts in these respective fields. Whatever I might contribute must necessarily be in directing your attention to broad policy matters, to trends which must be watched, and to suggestions as to where your special skill can be used to help solve utility problems, some of which are pressing for a solution right now and others which we can foresee if we study the future.

I suppose the best starting point for a discussion of the subject assigned to me is a statistical summary of the place of power sales in the utility picture.

The following figures for 1940 were furnished by the Edison Electric Institute, the last two months being estimated at the time of my inquiry.

Total Customers	30,091,488
Total kwhr	118,487,000,000
Total Revenue	$2,413,234,000

Of this huge business the Small Light and Power classification made up 14.1 per cent of the customers, used 18.8 per cent of the kwhr and accounted for 28.3 per cent of the revenue. The Large Light and Power group comprised only .605 per cent of the customers, used 50.3 per cent of the kwhr and paid us 25.8 per cent of our total revenues.

From these figures we can set up an average customer in each of these classes. The average Small Light and Power customer used 5,220 kwhr, paid $160.50 and earned a rate of 3.07c/kwhr. The average Large Light and Power customer used 328,000 kwhr, paid $3,420 and earned a rate of 1.04c/kwhr. When less than 1 per cent of our customers pay us more than ¼ of our revenues, each individual customer of such a group takes an added importance.

These few figures should be sufficient to convince any skeptic of the important position in the industry of this conference of the men who are responsible for the business relations between your companies and this concentration of business.

MR. SKINNER

My assignment was not qualified by limiting it to a discussion of power sales in the utility picture. If we are to get the proper perspective on our jobs we must look at the background of the times through which we are passing, the conditions of business, and the powerful ground swell of the events in Europe. In many respects this background is parallel to that existing in this country in 1916 and 1917. Then as now a great war was flaming in Europe, we were supplying munitions by the boat load and were earnestly debating our future course. That was 25 years ago. Many of those who shouldered the utility problems of that period have passed to their reward, some of us were just getting our start in positions where, as yet, we felt little responsibility for the decisions that had to be made. Most of us had little direct familiarity with what was going on.

It is difficult to draw a parallel because utility growth has been so prodigious. Detailed figures for that period are scarce, but with the help of the statistical bureau of the E.E.I. I did corral a few figures.

Between 1916 and 1940 the kwhr used by the Large Light and Power classification increased from 12,250,000,000 to 59,560,000,000 or 38 per cent, while revenue increased from 172 millions to 622 millions or 262 per cent.

The records of the old N.E.L.A. for those years disclose that management was wrestling with many problems, some of which sound strangely familiar. Those who are curious will find the 1918 convention proceedings particularly interesting for by that time most of the problems had developed to an acute stage.

We find the leaders of our industry were discussing such things as,

1. Financial difficulties brought about by fixed rates and rising costs.
2. Difficulty of refunding obligations and providing funds for much-needed expansion.
3. What policy to apply to extension of facilities for "war babies."
4. Power shortages and system interconnections.
5. Fuel shortages.
6. Policy with respect to an efficient new light source, the tungsten filament that was rapidly replacing the carbon and gem lamps.

Do some of those sound familiar to you? Some of those problems were solved, notably the interconnection of adjacent systems; others present themselves in different form, such as rising taxes rather than rising cost of materials; still others largely disappeared due to economic changes. Witness the present surplus bituminous coal capacity brought about by hydro development, improved fuel economy and the competition of other fuels. However, several are with us today in much the same form as 25 years ago.

As a matter of fact, I think it might be very profitable to us all to study carefully the record of those war years and to learn the answers which the record will disclose for many problems which seem to closely parallel those we face today.

It is interesting to note that in those days the industry was for a long period trying to awaken the Federal Government to take an interest in and help solve the utility problems. Today we are literally smothered by the attentions

of various government bureaus and commissions.

Speaking of specific problems I was impressed by a paper included in the 1918 convention proceedings, by Mr. Alex Dow on "Extension of Lines in War Time." You will find it on pp. 517. Mr. Dow started with four premises and I quote,

1. "War conditions are abnormal.
2. Public utility business will continue after abnormal conditions have ceased.
3. The public, through commissions and courts, demanded in normal times before the war, that public utilities should be managed and financed with extraordinary skill and capacity.
4. On the return of normal times we may expect that demands of former normal times will again be made upon us."

From these premises Mr. Dow discusses a problem which has confronted many of us in recent months, namely, how to deal with major extensions to serve a business whose continuance is geared to the war or to our own defense effort. Again, I quote Mr. Dow, "If it is obviously temporary, every commission and court will uphold him (the public utility manager) in refusing to make the extension unless the return of its entire cost is guaranteed during the period of its use."

Today we find a wide variety of plans to handle such business. We must admit that it is confusing to large industrial companies who are operating in a number of locations to be confronted with widely differing policies with respect to extensions they require. How much better off we would be if, after the last war experience, a definite policy had been crystallized and adopted by all companies for future use.

The present defense program is bound to bring about far reaching and possibly permanent changes in many communities. For example, the Federal Government is following a definite pattern of decentralization wherever it can in locating new defense plants. Thus we see huge manufacturing establishments which will employ thousands of workers, being built miles from present centers of population and sometimes in areas that have heretofore been predominately agricultural. Inevitably these plants will draw workers to them. People who have worked on farms all their lives will find out what work in industry means. Towns will spring up to serve these workers and the basic economy of large areas may be radically changed. Companies serving such areas have serious problems to face. How can they serve these huge new industrial establishments? Should they try? Obviously they will be called upon to serve the communities of workers that will develop. But what will happen after the war is over? Will they have ghost towns on their hands or will they enjoy a permanent expansion of their service?

The answers to such questions are difficult to determine. Certainly they will be affected by the character of the industrial development and the extent to which it will be adaptable to peace time activities. I, myself, am inclined toward an optimistic appraisal of the future of such enterprises for a number of reasons.

1. These plants will be the most modern production units in their respective fields.
2. After they have fulfilled their defense function, the government will probably want to dispose of those not required as military reserves. The government will have to stand the depreciation, and such plants may represent low investment producing units for the industry that acquires them.
3. I have unlimited confidence that the technical skill of the country will find ways to adapt many of these plants to peace time products.

Therefore, it seems to me that communities established around these defense plants will eventually stabilize as a result of a permanent relocation of industrial capacity. This may result in hardship for some of the older industrial areas that today are busy but which may in the future find themselves with outmoded plants and equipment trying to compete against these new up-to-date production units. On the other hand, these situations offer real encouragement to companies that have served scattered territory with little or no industry. There is much evidence to show that only by serving a substantial industrial load is it possible to attain low enough costs to justify the lower residential and farm rates that are so persistently sought by the politically minded.

These problems lie in the future. Let's take a look at some of those nearer at hand. Whether or not we get into the present war actively, we are already committed to become the "arsenal of democracy" and we will certainly face a war time economy for the next few years. Now, as in the early stages of the last war, we hear many people urging business as usual. That implies that we superimpose our defense effort on our normal peace time economy. That in turn requires a tremendous burden of expansion which normal business would not be able to fully utilize for years. It is more likely that we will soon begin to slow down on luxuries and non-essentials in order to give defense the right of way. Three factors are involved: raw materials, labor and power driven machinery.

For obvious reasons, we must not let a lack of power produce a bottle neck. We are in a much better position than in 1916-17. Then, many industries had their own generating equipment and the utilities were called upon not only to take care of a tremendous expansion in capacity by their existing customers, but also to take over a substantial amount of isolated plant load. Today the utility industry serves just about all the industrial load there is, except for the relatively few cases where heat balance, or waste fuels make local generation more economical. I believe that power facilities will prove to be ample for every requirement. We have not yet seriously begun to use our present tool equipment on a three shift basis. Output is bound to increase faster than peak loads. Labor and raw material shortages will probably pinch before power runs short. We have not yet felt the full effects of the compulsory military training program on labor supply and as labor shortages develop, producers of unessential items and luxuries will have to curtail output to allow maximum activity in defense work. Shortages in certain raw materials and lost foreign markets may work in the same direction.

I do not mean to imply that careful attention will not have to be directed to power supply. All of us should be thinking of what measures might be taken should the need arise. Some of these might be—

1. Power factor correction. Improvements in consumers power factor have the effect of unloading the entire supply system all the way back to and including the generators. Many companies have been at work on this problem for years, others have a long way to go. Whether your rates place a definite premium on high power factor or not, power men should be especially alert to effect every possible improvement.

2. Isolated plants. Over the past 20 years utility service has shut down hundreds of thousands of kw of isolated generating plant capacity. Much of it has been removed and junked but lots of it is still in place. Some of it could undoubtedly be put back in service in a pinch, to relieve peak loads. Would it not be prudent to have available full information on the condition of every such idle plant in your territory?

3. Waste fuels. Many industrial processes develop so called waste fuels. Typical are excess gas generated in blast furnace operation and steel making, biproducts of the petroleum industry, and sawdust or other wood waste. It is true that in most areas the possibilities of use have been pretty well exploited. However, it might be smart to dust off some of the old reports and have all information up to date and ready for use should emergencies develop.

4. Scheduling. We are emerging from a period when most of us had thousands of idle

kw of generating capacity going begging. During that period many ingenious rates were devised to put our capacity to work. Off-peak, dump, experimental, interruptible were just a few of the names applied to schemes devised for this purpose. Today as we more nearly approach full capacity those arrangements deserve careful scrutiny.

I am not going to even consider the last resort which might be used in a desperate situation, namely, power rationing. That was done during the last war. But we have become so much more dependent on electricity that cutting off service to any class of load today would be paralyzing. Even day time curtailment of residential service which was widely resorted to during the last war would be disastrous today. Radio dissemination of news unknown in the last war would be disrupted. Suspension of refrigeration, cooking and the services of a myriad of labor saving appliances in homes would be unthinkable today. We must find ways even in a desperate situation to avoid such a catastrophe.

The coincidence between our current discussion of fluorescent lamps and the discussion during World War I of the then new tungsten filament lamp offers some constructive parallels. Again, we are confronted with a new light source from two to three times as efficient as those heretofore in common use.

Although the lighting load is only a small proportion of the total industrial load, the possibility of providing 30 to 50 foot-candles at no increase in present connected lighting loads should prove interesting. If it becomes necessary in the interest of other considerations to freeze kw demands for lighting at present levels, we will still be able to provide millions of workers with the benefits of better illumination by means of fluorescent lamps. After the emergency, the quest for new business will find us in a position to resume our forward march from a much higher plateau of lighting levels, plus the effect on other lighting usage engendered by the experiences with superior factory illumination. The power factor situation must, of course, be watched for it won't do the customer or ourselves any good to choke the wiring with useless amperes. I do not wish to imply that the fluorescent lamp is the one and only answer to industrial lighting problems. Our lighting people are fully capable of prescribing for the customer's needs, but I do point this out as further evidence, if it is needed, that the fluorescent lamp and load mortality are not linked in sinister combination in the minds of utility executives.

Now let's turn for a moment to the important matter of customer relations. Let's step back and look at our average industrial customer. What is his frame of mind?

First, let's put down that he is a very harassed individual. He is trying to readjust himself to a dozen new problems. He is trying to learn what it means to "bargain collectively." If he had any export business, he is trying to get along without it, or is beset with new problems of export licensing, lack of shipping facilities, war risk insurance, shifting foreign exchange and a dozen other questions equally as vexing. He may be trying to supply new products to replace those formerly secured from countries now at war. He is having trouble getting new tools, he may be running into priorities, delays or even impossibilities in securing raw materials. He may be trying to change over some of his plant to accommodate defense orders, or he may be simultaneously trying to maintain production, build a new plant, and train an expanded labor force. He has tax problems. In fact, he is the only fellow who has more problems than we do. He is busy, under a strain, and it would be a miracle if under the circumstances he were not short tempered.

If we understand the way he feels and handle our contacts with him so as to be helpful we will win his everlasting gratitude. If we let our own troubles influence our attitude and allow a chip to perch on our shoulder, we will be in for some first class scraps which will leave bad scars.

We must be attentive without being annoying, we must be helpful in every constructive way and above all we must maintain a flexibility of mind and studiously avoid falling back on rules or become arbitrary.

In my company we are great believers in finding out what our customers are thinking through outside unbiased sources. We have conducted a number of surveys of opinion among our residence customers in the past. Recently with the cooperation of the local Electrical Association we completed a survey among our industrial customers. We had recently made a change in industrial rates which could not help but be annoying to some customers. Raising the limit of size for primary service, eliminating optional rates, changing demand intervals, and instituting a charge for low power factor, all at the same time put a considerable strain on our relations with some customers. For this reason, we were expecting the worst.

That our boys did a splendid job of handling the whole matter was thoroughly demonstrated by the results of the survey.

Answers to the query "What is your general attitude toward your electric company . . . favorable, unfavorable or indifferent?" brought forth a gratifying response of over 90 per cent favorable reaction. It seems to us therefore that our customers conceded the reasonableness of our rate adjustments.

Again we threw out our chests modestly when the answer to the question "What reasonable service do you believe your electric company should give that you are not now receiving?" brought forth a strong chorus of "NONE."

But when we came to analyze the answers to the sections devoted to a discussion of rates and bills, we found that, while the vast majority of our industrial and commercial customers WILL NOT admit that they do not understand their electric bills, they can not tell us off hand their average cost per kwhr. This fact, and surveys among domestic customers confirm this lack of understanding still more emphatically, indicates clearly to me that the industry in general has a job cut out for it . . . to drive home to all customers the fact that electricity is cheap and to drive it home in such a manner that in the future every customer will become conscious of how much he is paying us for one of his most indispensable manufacturing tools, just as he is conscious of the prices he pays for other raw materials. Then by comparison he will begin to appreciate the service we are supplying in a way that will cause him to praise us rather than be indifferent to us.

In closing I want to revert to one of the problems that, like the poor, seems to be always with us. Can't we somehow arrive at more uniformity in the terms upon which our service is offered to customers? I'm not speaking of power *charges* but rather the welter of confusion that has grown up among us covering the terms and conditions under which power service is rendered. Such things as the conditions under which facilities are extended or expanded, variations in point of delivery, extent to which duplicate facilities are provided, termination charges, requirements on receiving equipment, to say nothing of rate provisions.

I know from experience that every rate man has a dozen reasons for setting up his rates the way they are. But wouldn't it be possible for a committee of this group to draft a skeleton or framework toward which we might

(*Continued on page* 160)

Opportunities for Everyone

By F. McQuillin
West Penn Power Company

An address before a Power Sales Session of the Eighth Annual Sales Conference, Edison Electric Institute, Chicago, March 31 - April 3

I—Defense Industry and the Power Man

FOR ten years now we have been hearing on all sides the cry, "What this country needs is a new industry." We now have it—it's the Defense Industry.

Any business employing four million men and contemplating feeding, housing and equipping these men is a *big* business. Its requirements are enormous. Its needs are urgent. It is of primary importance to everyone in this country.

Many of us in this room have boys of our own who are or will be in it or fellow employees who will be in it. And our electrical industry is "geared to it without a clutch."

In western Pennsylvania, we are associated with two of the basic armament industries. They are the coal and the steel industries. Naturally, *they* are busy *long* before other activities are started. It is eighteen months now since our electric service to these basic industries exceeded our *long-term normal*. As each industrial area throughout the United States begins to make goods from these basic products for this enormous program, those problems and opportunities that have occurred in western Pennsylvania may be useful in *your* industrial activities.

To say the least, first experience shows that the problems surrounding the Defense program are very complex. These are a few of the items that are forever bubbling up: Uncertain plans; jittery money; shortages of men; slow delivery of materials. Tremendous demand for machines; uncertain size of orders. Prime contracts; sub-contracts. Priorities; substitutes. Minimum prices; maximum prices. Complete market dislocations; abnormal market growth. Red tape; bureaucracies. Sovereign powers of government; new laws. O P M; P D Q. And above all—*freedom that endures.*

And then with all this, you are told so frequently, it's "in your lap." You know—the last man in knows what he is!!

Remember when you were a kid, and you got a bright red kaleidoscope for

MR. McQUILLIN

Christmas? It puzzled you at first. You knew you were too old for a rattle; yet, there in one end was a handful of brightly colored pebbles—or bits of glass. Just no sense to it until you held it up to your eye and looked toward a light. Then, wonder of wonders, the mess of pebbles formed a most colorful, amazing, symmetrical pattern.

Now that's about what we have to do when we look for our place in the Defense program—we have to hold it up to the light, and some things begin to evolve—to take understandable shape.

Parts of the Pattern

This new industry, as everyone expected, is the major stimulant that brought about business activity above long-term normal. That is one part of the pattern.

Now England, Germany, the late France, Russia, Japan and Italy have *permanent* arms, munitions and equipment industries which are busy in times of peace as well as war. Surely the United States, with its new large army, vast fortifications, and world's greatest two-ocean Navy on a permanent basis, must have acquired for itself a *permanent new industry.*

It is going to take a lot of firm kilowatts to keep a two-ocean Navy in fighting trim—to keep 50,000 or even 25,000 effective fighter planes warmed up for the takeoff—a dozen or more new naval bases, in shot and shell—and a million khaki clad troops supplied with boots, beans and bombs.

Of course, we won't keep up the mad pace we have set for ourselves in this initial period, while everybody is hustling and scrambling to tool up, order up, stock up, and speed up at the same time. Mr. Skinner mentioned this problem. Nevertheless, many industries now busy beating plowshares into swords, will not fully return to their plows. A part of this new industry is a permanent one for the United States. That is another section of the pattern.

And another important civilian pattern takes form:

Those industries which do return to civilian life will make a different kind of plow—a better kind of plow—one streamlined to perfection, with handles of new plastics, plowshares of new alloys. Shot welded and finished with new synthetics, dried under infra-red lamps. Drawn by an aluminum tractor with fluid drive and neoprene treads. The most capable and energetic research men and inventors of every private industry in the United States will develop these better "plows." I am not like Mr. Skinner's description of an optimist—the boy in the back row who winked at the chorus girl in the first row—for already the men in the glass industry have developed a glass to operate in the substratosphere. The alloy steel men have developed new alloys. Both were for the Defense program—but they are now in commercial use.

Mr. Charles F. Kettering of General Motors' Research, stated something to this intent: "A major factor in our prosperity in the roaring 20's was the result of the commercial promotion and development of wartime discoveries." *Already* we have *these* signs that our Defense program will create many new and better things for commercial purposes and will assure our *continued strength.* This is a brilliant part of the kaleidoscope pattern.

So out of this very complex and new

industry, we power men can begin to conceive where we can devote our time most effectively.

We can take time to know the men in this new industry and deal with them just as we deal with our other customers (i.e., from the basis of their experience.)

We can take time to look for and identify the parts of the industries that are to be permanent, and unhesitatingly adapt our attitude and promotion accordingly.

We can take time to keep pace with all the new things that are being developed to ensure our future prosperity.

II—Growing Industry and the Power Man

Mr. Knudsen stated last week that 784 new plants will be started and in operation by July. That's a lot of new industrial plants. Many of these new plants must be located in the territories served by your companies. And here again, some of you may meet new load conditions. Your industrial loads might be growing much faster than your commercial or residential loads. You'd like to know what's coming.

Perhaps you'd like to see what happens in West Penn territory that serves a predominant industrial load. A territory which serves the durable goods industries. The curve, Fig. 1, is a twenty-year record. The thin black block at the bottom is the residential consumption. The thinner white one is the use in stores, offices, commercial establishments. The *big* grey block is the electricity used by industry (currently running at 80 per cent of our total). The dotted black line running through the grey line represents the *long-term normal*. Don't overlook that line. That is our gyroscope to keep us level headed.

As your industrial business grows, your total business will lose the seasonal characteristics and acquire unseasonal peaks and valleys. Your business will no longer vary because the world goes round the sun every twelve months. It will vary with public initiative, intelligent work and belief in our future. Year to year comparisons will have a different significance — of lesser importance.

When your business plunges to the depth of a gorge, you'll think it is never coming out. Your customers will grumble about over capacity, *curse* machines, and almost *hate* enterprise. When it climbs to new peaks (sometimes jumps) you'll worry about your capacity. You'll worry about the low net rate to industry. Forgetting the high return per kw month or year you'll worry about what's going to happen when the bottom drops out. In both cases, you forget about your long-term normal — your gyroscope.

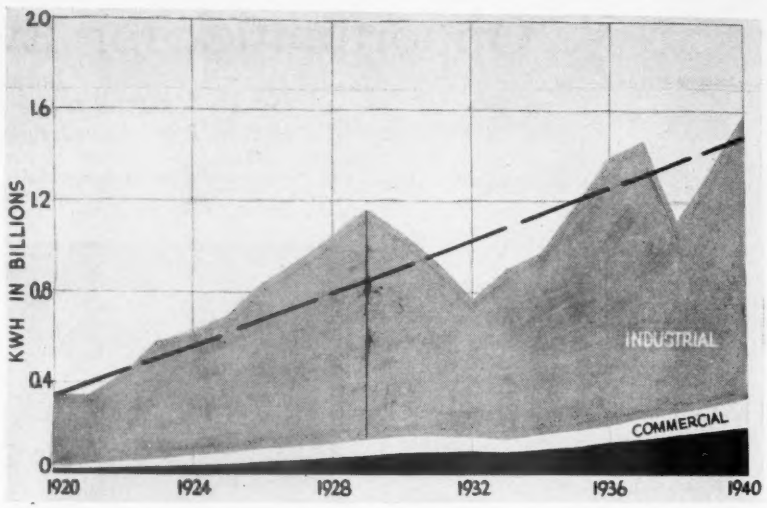


Fig. 1

These are the joys of serving a heavy industrial territory. These are the conditions that some of you can anticipate and look forward to. For today's O P M official information about still more new plants promises much more decentralization. More new industrial plants are to be located in non-industrial areas.

When you have these conditions—if not before—you'll find that it pays the industrial men to continuously study and record present and future market information. To anticipate the peaks and valleys—to reset the gyroscope.

III—A Healthy Change and the Power Man

Two weeks ago, a Colonel from the Ordnance Department addressed more than a state-wide Industrial Sales Conference of the Pennsylvania Electric Association. He told us that his new experiences gave us the right to be called "Doctors of Industry." Undoubtedly some of us liked that idea. Others recalled that doctors were used only when you were sick. It is the rare doctor that is used when you are both sick and well.

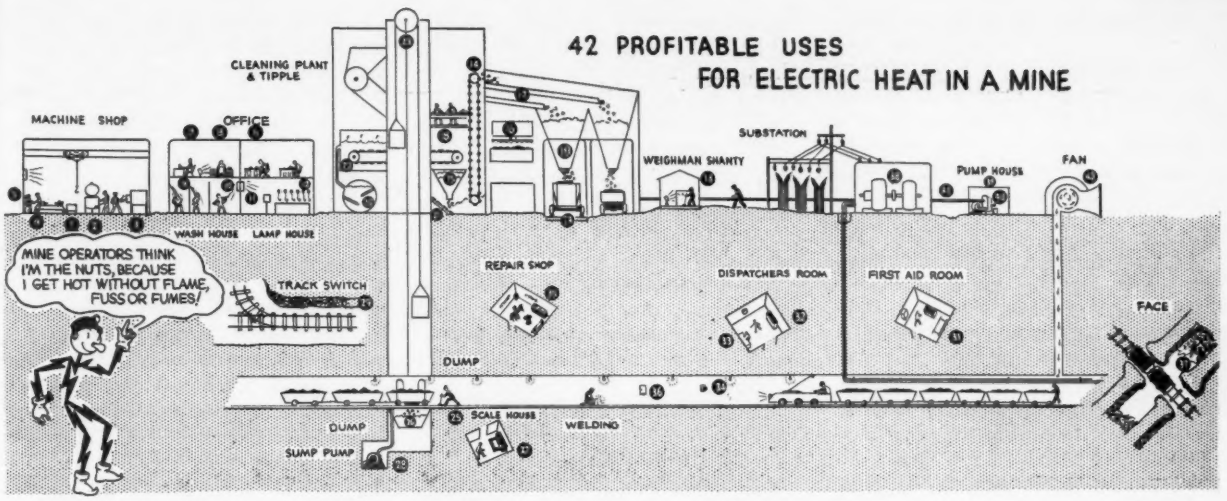
As your industrial load grows, one way to keep up your long-term normal is to have more healthy patients than sick patients. Our experience shows that we have both, but fortunately the healthy ones predominate.

I did not exaggerate when I said that "some customers *grumble* about overproduction, *curse* machines, and *hate* enterprise, when they are in the valley." They were sick. Yet at the same time other men in the steel and the coal industries—and in the hundreds of small industrial towns — were putting forth every effort to keep well.

The long-term history of industrial health is still our cue. It was in 1891 that Bessemer's patents expired in the steel business. But this man's development grew and grew until the coming of the open hearth furnace. That occurred in 1910. Then the Bessemer process, because of no new improvements, did as all other businesses do who don't develop new things. From its start it grew and prospered mightily, and then stagnated and nearly died.

But a young man just recently has had another look at this Bessemer process. Here is a fine example of the cohabitation of an enterprising young man and mother necessity. For they have produced a thriving youngster. The youngster is doing its part in making steel for Defense.

Just two or three years ago, Jones & Laughlin Steel Company, who were still using a lot of old Bessemer converters, introduced the young research man to Mother Necessity. The result was the discovery of "Bessemer flame control,"—a precision instrument using photo-electric cells to control precisely the entire process of Bessemer steel making. Already other large companies have been licensed to use this device, so that they, too, can economically restore Bessemer converters to service once



LOCATION	BENEFIT	KIND OF HEATER
MACHINE SHOP		
1. Babbitt pot	Accurate temp. control	Electric pot
2. Tool tempering	" " "	Small furnace
3. Armature oven	" " "	Strip heaters
4. Rubber repair	Vulcanizing cable and belts	Special equipment
5. Air warming	Comfort with safety	Convection heaters
MINE OFFICE		
6. Hot water	Always ready	Water heater
7. Blueprints	Dries quickly	Drying lamps
8. Air warming	Clean, requires no attention	Convection heaters
WASH HOUSE		
9. Hot water	Always at proper temp.	Water heater
10. Air warming	Comfort with safety	Convection heaters
LAMP HOUSE		
11. Air warming	Comfort with safety	Convection heater
12. Distilled water	Clean, compact, no attention	Electric still
WEIGHMAN'S SHANTY		
13. Air warming	Clean, safe, fumeless	Convection heater

LOCATION	BENEFIT	KIND OF HEATER
CLEANING PLANT		
14. Flight conveyor	Warm lubricant, easy start	Strip heaters
15. Sand drying	Keep it flowing	Strip heaters
16. Oil for dust proofing	Prevent freezing	Strip heaters
17. Shaker conveyors	Keep bearings lubricated	Strip heaters
18. Picking tables	Keep workers' feet warm	Heated floor pads
19. Coal chutes	Prevent freezing	Strip heaters
20. Wash water	" "	Immersion heaters
21. Sludge conveyor	" "	Strip heaters
22. Water valves and pipes	" "	Strip heaters
23. Cable pulleys	Keep lubricated	Strip heaters
24. Track switches	Keep free of ice and snow	Snow melters
DUMP		
25. Air valves and rams	Protect against freezing	Strip heaters
26. Chute gates	" "	Strip heaters
27. Scale house	Air warming for comfort	Convection heater
28. Sump pump	Protect against freezing	Strip heaters
29. Track switches	" "	Strip heaters
30. Forced feed oil	Keep oil flowing	Strip heaters

LOCATION	BENEFIT	KIND OF HEATER
UNDERGROUND		
31. First-aid rooms	Keep warm and dry	Electric blanket
		Convection heater
32. Dispatcher's room	Air warming for comfort	Convection heater
33. Foremen's rooms	" " "	Convection heater
34. Telephone boxes	Prevent condensation	Cartridge heaters
35. Repair shop	Air warming for comfort	Convection heaters
36. Fire extinguishers	Prevent freezing	Cartridge heaters
37. Shooting coal	Discharge CO_2 cartridges	Cardox equipment
SUBSTATION		
38. Motor and generator	Prevent condensation	Convection heater
PUMP HOUSE		
39. Motor	Prevent condensation	Strip heaters
40. Valves and pump	Prevent freezing	Strip heaters
41. Exposed pipes	" "	Heating cable
FAN HOUSE		
42. Motor	Prevent condensation	Strip heaters

Fig. 2

more. The patient was getting a little old, but a man has rejuvenated him.

Last year a comparatively young man was given a National award for meritorious achievement. This young man would watch the operations of his father's paper mill. He was in the steel business, and he didn't understand why you couldn't make steel sheets the same way. His idea needed big blue chips. It was a little more than difficult to find men of enterprise, even in the steel business, for this untried method. But when the man was almost ready to give up in disgust, he got a receptive ear at the American Rolling Mill Company. His invention was the continuous rolling mill. It was probably the biggest single contribution to the steel industry in the last twenty-five years. It made the safety turret top auto possible. The young man is now vice president in charge of operations of the American Rolling Mill Company. His name is John C. Titus.

Since the introduction of his continuous mill, the steel men have speeded it up. Now they can roll some sheets at the amazing speed of thirty miles an hour. This patient is still healthy.

For our sick patients, I'd like to encourage them by pointing out that the steel industry for forty years, on a gyroscope basis, has created 8000 new jobs a year and paid out 16,000,000 more dollars a year in wages.

The power men and their good service had some part in being the doctors to these healthy patients.

Then there's the case of the men in the coal industry, particularly the bituminous coal industry. Mr. Skinner mentioned it. They go up and down so much that the operators never know whether they are sick or well. They spend a lot of time worrying about their competition—oil and gas. But let one of these "doctors of industry" have a look at it from the outside in.

In the five-year period ending 1912, the national coal production was two billion, three hundred million tons. For the five-year period ending 1941, it will be exactly the same.

But that part of the patient that is in Pennsylvania has suffered from a growth known as changing market location. As industry spread, the newer mines in West Virginia and Kentucky got more and more of the business. Pennsylvania produced eight hundred million tons in the five years starting 1912, and will have produced five hundred twenty-five million tons in the five-year period ending 1941.

But the men in the Pennsylvania coal industry are not stagnating. (And neither is their doctor.) Today, while there are far fewer mines, more of them are electrified than ever before in history. For instance, we serve 407 of them. Again, more than 20 per cent of their production is fully mechanized by the standards of today's knowledge. This mechanization represents 200 per cent increase in the past five years.

Last year 407 mines bought four million, three hundred fifty thousand dollars worth of electric rejuvenator. The "doctors of industry" say that this figure will be five and a half million dollars in five years from now. And these doctors know every point of stagnation.

You "doctors of industry" have always laughed at the absurdity of "carrying coals to New Castle." Yet I have here (Fig. 2) the doctor's prescription for 42 profitable and successful uses for electric heat in the coal mine.

The patient is getting much better. His long-term normal is assured.

I mention these two industries of steel and coal because they are basic and because I know the most about them. But there are a lot of healthy patients whose long-term normal is continuing up, with healthy results for all of us. Men in the glass container industry and in the typewriter and office machine industry have done some wonderful things. So it is with men in the boot and shoe, printing and publishing, automobile and dozens more.

Men in all of these industries will keep well if they don't stagnate. And so will the doctors.

IV.—Industrial Communities and the Power Man

Some of our sick patients try some wondrous cures. They even become their own doctors, and we lose them to competition. After that, they either die or come back to us. Others, just change doctors. They think the town they're in is no good. They listen to the snares and delusions of free sites, no taxes, low labor costs, and low doctor's costs. I don't know what happens to all of them —but I know some of them come back.

In your new and growing industrial towns, you'll have plenty of healthy patients who know they can grow from within. Your towns may have the history of ours.

In the beehive of industry surrounding Pittsburgh, West Penn serves 950 communities, of which 800 have a population of less than 1000. There are only four with a population over 20,000.

Now in one of these towns named Monessen some healthy patients got together and decided the location was very favorable for a steel plant. They formed a land company. A steel plant was started. It was later acquired by the Carnegie-Illinois Steel Corporation. And what followed? Because these men were right about the location, there grew up 15 other manufacturing plants. This little town had 28,000 people in 1929 and payrolls of two million dollars, which went to about 9000 workmen.

Since then, one of their big industries has left the town. (The plant died of obsolescence). But the men in that town didn't stop until the big plant had been reoccupied by local people, if you please, and it is on its way again.

There is a little town that is near the famous Drake oil well—the first, I believe, in America. The town is named Parkers Landing. As the oil business dropped off, they literally shriveled from a population of 20,000 to 1000. Here again there was one local patient—a healthy one—who inspired two or three other men to build a plant for high grade bottles. This plant was later acquired by a larger glass company. Last year they were among the first to make a light weight bottle. They are employing several hundred men.

You may have read of the classic example of Scottdale—about 40 miles from Pittsburgh. A town of 8000 which grew up around a sheet rolling mill. The plant closed in '28, and in 1933 the tag which they, themselves, put on the town was "the second worst hit community in the United States." About the only thing still running was the little stream which had turned the rolls for the original rolling mill.

But they didn't die. Some men in the town set out to promote its assets. They did a swell job. Instead of one big industry, they now have five small ones. All of them local—but growing. Today, the "for rent" signs have disappeared from Main Street. The Padlock has been removed from the YMCA doors. Theaters are playing to full houses. They are getting well from within.

This week one of our larger towns is putting on the biggest celebration in its history. It's welcoming back a big company that moved away three years ago. The company will employ 1000 men and women. How did they get it back? Well, there were some aggressive men in that town—healthy men. Although the plant was not really for sale, they prepared a lot of information about the plant and put it up in an attractive prospectus. The owners got so many inquiries and the prospectus looked so good that the company decided to reoccupy the plant themselves.

In every one of these cases the "doctors of industry" were engaged by the patients, many times even before there was any sign of disease. The power men, together with the Industrial Development men and the District Managers, spend a lot of their time in building these little industrial towns from within.

V.—The Future and the Industrial Power Man

Quoting from a newspaper of fifty years ago: "We'll have a hard time to make any further improvements." I can imagine my dad saying that something over fifty years ago, when I fell out of a hard wicker cradle — and he and mother carefully bathed me (on Saturday night, I suppose) in an earthenware tub, on the stone kitchen floor, in lukewarm water, heated by a huge, cast iron, wood and coal fired range. Those were only the bathing arrangements. Goodness knows what the toilet facilities were. How did they get me housebroken?

It seems just as difficult now as then to make improvements — but it's easy. Choice of the best ones is the only problem. Which shall we do first — not, what can we do?

Mike Owens, the founder of the Owens Bottle Company, who revolutionized the glass bottle business, after a visit to an English plant, which they would not let him see, stated: "I have always been interested in reading history, and my reading of history concerning the great Chinese Wall convinces me that the great wall kept out more good ideas than it kept in."

The men of the Edison Electric Institute and the Great Lakes Power Club are healthy patients. The "doctors of industry" are healthy patients. There is no Chinese wall between them. *Proof* is this National Sales Conference.

All of these activities of the "doctors of industry" and their healthy patients have always set American industry apart and ahead of industry all over the world. The Defense Program will be duck soup. The civilian program won't be the gay 90's or the roaring 20's, but the progressive 40's. The time when men in industry really learned to *produce* with *juice*.

The Place of Power Sales

(*Continued from page* 156)

progress as individual circumstances permitted? It is quite possible that such a framework would differ in some respects from the practice of every company in the country and those who do the work on it would have to divorce themselves from their own companies' practices as they have developed historically. In spite of the recognized difficulties in the way of such a program, it is impossible for any business man to understand why, for example, he pays for maximum instantaneous demand in one case, 2-3-5-15-30 or 60 min. in others, while in still other cases he may be billed on the basis of the average of some arbitrary number of highest demands.

Couldn't we agree on some one demand interval as a standard to work toward. Similarly with such other factors as

Number of hours use included in successive energy blocks, power factor clause,
division of ownership and requirements for receiving equipment,
minimum size customer allowed to take primary service,
differentials for various voltages of delivery,
provisions for handling fluctuating loads,
provisions for handling daily off-peak loads,
provisions for handling seasonal industries.

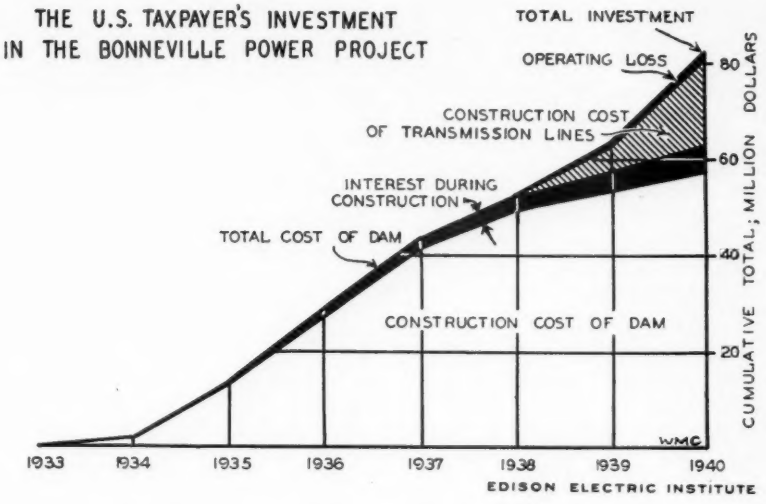
I realize that other departments in your companies may take responsibility for the formulation of rates but you men know better than any one else what the customer thinks of them. I am convinced that a report from your group offering such a framework would be a most helpful step toward desirable uniformity.

Finances of the Bonneville Project—1940

By William M. Carpenter
Economist, Edison Electric Institute

BONNEVILLE DAM is located on the Columbia River, forty-two miles east of Portland, Oregon, and 144 miles above the mouth of the Columbia. The project provides for a dam, power plant, lock and fishways, for power and navigation. The power house will have an ultimate installation of 10 units, consisting of 2 units of 43,200 kw each and 8 units of 54,000 kw each, totaling 518,400 kw. Two units were in operation at the end of the 1940 fiscal year.

The total cash expended upon all the various phases of this enterprise is shown by Table I, "U. S. Taxpayers' Investment in Bonneville Project." The growth by years is illustrated on the chart.



Navigation

The ship lock has a single lift, with clear dimensions of 76 feet in width, 500 feet in length and depth of 24.2 feet over the sills at adopted low water. The lift at extreme low water and normal pool level is 66 feet. The ordinary and extreme fluctuations of the river at the lower lock gate are about 21 and 47 feet, respectively.

At the Port of The Dalles (population about 6,000) two miles above Bonneville, there is a municipal wharf, 125 by 1,100 feet, and two one-story timber and corrugated-iron warehouses, each 94 by 461 feet. There is also a municipal oil terminal with a concrete and timber wharf 27 by 193 feet and private storage tanks with a total capacity of 1,383,000 gallons, located near this terminal for handling petroleum products from river boats. A private grain elevator with a capacity of 40,000 bushels for handling bulk grain is also located at The Dalles. The existing facilities are considered sufficient for the needs of the present commerce.[1]

Above The Dalles, the Dalles-Celilo Canal limits navigation by an available depth on the lower lock sills of 7 feet.

During the calendar year 1939, the total water-borne freight through the lock at Bonneville was 416,814 tons, of which 202,015 consisted of gasoline,

[1] Report of the Chief of Engineers, U. S. Army, 1940, part I, Vol 2, p 2019.

TABLE I—U. S. TAXPAYER'S INVESTMENT IN BONNEVILLE PROJECT (As of June 30, 1940)

Construction Expenditures		Interest	Total
Dam, Power House, Lock, etc.			
*By U. S. War Dept.	$57,222,870	$5,810,927	$63,033,797
Transmission, etc.			
**By Bonneville Power Admn.	15,708,031	340,569	16,048,600
***W P A Contribution	2,514,431	.....	2,514,431
Total Construction	$75,445,332	$6,151,496	$81,596,828
Operating Loss			
Operation & Maintenance, War Dept.	$557,992		
ditto, Bonneville Power Admn.	489,556		
Total	$1,047,548		
Less: Power Revenues	414,513		
Total Operating Loss			633,035
Taxpayers' Cash Investment: June 30, 1940			$82,229,863

NOTES: *Total expenditures as shown in Annual Report of the Chief of Engineers, U. S. Army, 1940, p 2025.
Interest computed as compounded annually at the average interest rate paid on outstanding U. S. Treasury bonds.
**"Fixed assets—equipment $634,141."
"Construction work in progress 15,073,890."
As shown in Balance Sheet, Table 14, page 83 of the 3rd Annual Report of the Bonneville Power Administration for 1940.
Interest computed as above.
***Clearing right-of-way.

TABLE II—CONSOLIDATED COST OF BONNEVILLE PROJECT

Fiscal Year Ending June 30:	Cost of New Work	Maintenance & Operation	Total
1934	1,918,747	.....	1,918,747
1935	10,785,190	.....	10,785,190
1936	14,112,445	.....	14,112,445
1937	14,781,420	.....	14,781,420
1938	7,368,549	34,388	7,402,937
1939	3,964,997	223,618	4,188,615
1940	4,291,522	299,986	4,591,508
Total	57,222,870	557,992	57,780,862

Source: Annual Reports of the Chief of Engineers, U. S. Army.

TABLE III—U. S. WAR DEPARTMENT COST ALLOCATION

	Navigation	Power	Total
Dam and Reservoir	$15,033,500	$15,033,500	$30,067,000
Fishways	3,538,600	3,538,600	7,077,200
Buildings and Grounds	450,900	450,900	901,800
Joint Use	$19,023,000	$19,023,000	$38,046,000
Navigation Alone	5,631,300	.....	5,631,300
Power Alone	.....	11,089,400	11,089,400
Total	$24,654,300	$30,112,400	$54,766,700
Per Cent of Total	45%	55%	100%

TABLE IV—FPC COST ALLOCATION

	Navigation	Power	Total
Joint Use	$35,988,800	$ 2,501,900	$38,490,700
Navigation Alone	5,517,600	.....	5,517,600
Power Alone	.....	9,180,500	9,180,500
Total	$41,506,400	$11,682,400	$53,188,800
Per Cent of Total	78%	22%	100%

TABLE V—OPERATING EXPENSES—BONNEVILLE PROJECT

Fiscal Year Ending June 30:	Operation & Maintenance War Dept.	Operation & Maintenance B.P.A.	Total Expense	Less, Power Revenues	Loss for Year
1938	$ 34,388	.....	$ 34,388	.....	34,388
1939	223,618	*254,207	477,825	**46,543	431,282
1940	299,986	235,349	535,335	367,970	167,365
Cumulative to 7-1-40	$557,992	489,556	$1,047,548	414,513	633,035

NOTES: *Cumulative to June 30, 1939.
**As shown in Table 14, p 62, Report of the Bonneville Administration for 1939; figures do not exactly tally with subsequent report which showed $49,835.

TABLE VI—KWHR SALES 1940

Purchaser	Max. Annual Kw Demand	Kwhr Sold	Revenue	Avg. Price
3 Municipal Systems	1,143	2,721,440	$ 10,803	0.40¢
1 Public Utility District	198	391,510	1,517	0.39
2 Utility Companies	86,130	185,282,543	355,343	0.19
1 Construction Company	44	20,500	307	1.50
Total	87,515	188,415,993	$367,970	0.20¢

133,785 of rafted logs and 49,420 of wheat.[2]

Costs

Up to June 30, 1940, the Bonneville Dam cost $57,222,870, Table II, in out-of-pocket expenses. In addition, some $5,810,927 was spent by the U. S. Treasury in interest during construction, bringing the total to $63,033,797. At an average cost of money to the United States Government, as determined by the average interest rate paid on outstanding U. S. Treasury bonds, of 2.60 per cent, the 1940 annual interest was $1,542,972.

In 1937, the Chief of Engineers of the U. S. War Department submitted the allocation between power and navigation shown in Table III.[3]

On the other hand, the Federal Power Commission, one year later, divided costs as shown in Table IV:[4]

On the basis of the War Department's allocation 45 per cent of the 1940 interest of $1,542,972 is $694,337. If to this is added another 45 per cent of the $299,986 operating cost of dam and lock, Table V, there is a charge to navigation of $830,000, for the fiscal year 1940. This represents $2 for every ton of freight passing through the lock. On the basis of the Federal Power Commission's allocation, 78 per cent of the annual interest and operating expenses is $1,438,000 or nearly $3.50 for every ton of freight. On gasoline alone, this is almost 1½ cents per gallon.

The Annual Reports of the Bonneville Power Administration show no allocated balance sheet and the latest one states that:

"Energy is produced by the U. S. Army Engineer Corps and costs are not reflected on our records."[5]

Power

In the fiscal year 1939, the total sales of Bonneville power were 30,077,293 kwhr, for which the sum of $46,543 was received. The 1939 report estimated 1940 sales at 400,000,000 kwhr (page 5).

The actual sales in 1940 were 188,415,993 kwhr, distributed as shown in Table VI.

Expenses during this fiscal year were:[6]

Transmission	$ 40,280
Customer's accounting and collecting	3,666
Administrative and General	191,403
Depreciation	2,519
Total	$237,867

No mention is made of interest charges.

To these operating costs must be added that borne by the War Department in producing the power.

If the allocation of the Chief of Engineers is accepted and 55 per cent is applied to the 1940 annual interest charge of $1,542,972 plus the $299,986 operating expense of the War Department, the further sum of $1,013,627 is applicable to the cost of power in the 1940 fiscal year. This brings the grand total to $1,251,494, or 2/3 cent per kwhr sold and leaves a deficit (before depreciation on the Bonneville Dam hydro plant) of $883,524 for the year.

If the Federal Power Commission's allocation of 22 per cent to power is accepted, the costs at the dam were $405,450, bring the grand total cost to $643,317 or 0.34 cent per kwhr sold, leaving a deficit (before depreciation on the Bonneville Dam hydro plant) of $275,347 for the 1940 fiscal year. If the example of the T.V.A.[7] is followed and 1½ per cent of a total cost of, say, $60,000,000, is applied as the depreciation on the dam and appurtenances, this figure would be $900,000 for 1940 and would add $495,000 to the above deficit in the case of Engineers' allocation and $198,000 in the case of the Power Commission.

In addition to these costs, there is also the item of depreciation on substations and transmission lines, the first of which (the 40-mile twin-circuit between Bonneville and Vancouver, Washington) was completed on December 1, 1939. The Annual report of the Bonneville Power Administration (page 86) states, however, that:

"This element was omitted due to the relatively short period any of the lines were in service during fiscal year 1940 and to the fact that our depreciation studies are not yet complete."

[2] Report of the Chief of Engineers, U. S. Army, 1940, part 2, p 1343.
[3] Report of E. M. Markham, Chief of Engineers, to House Rivers & Harbors Committee, March 17, 1937.
[4] FPC Release #380, February 9, 1938.
[5] 3rd Annual Report, BPA, p 86.
[6] 3rd Annual Report, BPA, Table 1, page 16; also Table 16, page 85.
[7] Depreciation rates at June 30, 1940, on multiple-purpose projects were as follows:

Item of Plant	Pickwick	Wilson	Guntersville	Chickamauga	Wheeler
Dam & Spillway	1.49%	1.40%	1.49%	1.34%	1.14%
Powerhouse & gates	1.33	1.32	1.28	1.27	1.41
Locks & mach'y.	1.35	1.45	1.34	1.34	1.40
Turbines & generators	2.51	2.84	2.52	2.51	2.53
Accessory elec. eq'pt	3.66	2.58	3.84	3.66	3.76

Source: Annual Report of the TVA for Fiscal Year Ending June 30, 1940, page 42.

Group Meetings, Practical Discussions, Feature Fifth National Accounting Conference

PRACTICAL, down-to-earth discussions of utility accounting problems in general sessions and meetings of specialized groups characterized the Fifth National Accounting Conference of the American Gas Association and the Edison Electric Institute, held April 7 and 8 at the Netherland Plaza Hotel in Cincinnati, Ohio. About 450 accountants, representing gas and electric companies in many sections of the country, took part.

Most of the conference work was done in the group meetings, each devoted to a particular phase of accounting. Altogether, 18 of these discussion meetings were held, and the subjects included customers' activities of all kinds, depreciation, general accounting, insurance, materials and supplies, plant records, taxes and uniform accounting. The procedure was largely informal, the presentation of papers being followed by open forums in which a free interchange of questions, ideas and experience was encouraged. A general session for all delegates opened the conference on Monday morning, April 7, and Tuesday morning was devoted to two general group sessions held simultaneously, one concerned with customers' activities, the other with general accounting matters.

E. N. Keller, chairman of the AGA Accounting Section, and G. H. Bourne, chairman, EEI Accounting Executive Committee, who directed the conference as co-chairmen, presided at the Monday general session. After brief opening remarks, Mr. Bourne introduced H. C. Blackwell, president of the Cincinnati Gas and Electric Company, host to the conference. Mr. Blackwell welcomed the delegates to Cincinnati and assured them of the sincere interest his company has in the conference work.

The contribution the electric utilities are making to the national defense program was reviewed by Charles W. Kellogg, president of Edison Electric Institute and now serving the Office of Production Management as chief of power in the Mining and Mineral Products Section of the Materials Branch, Production Division. The industry is prepared to meet any demands made upon it by the defense program or any eventualities of the present situation, Mr. Kellogg said. Major Thomas J. Strickler, president, American Gas Association, told the delegates that the AGA is maintaining close liaison with government agencies through its Committee on National Defense and complete coordination of defense efforts is in effect.

Internal checks, controls and audits, a subject which has been studied intensively during the past six months by the General Accounting and Customers' Activities committees, were discussed by J. Arthur Marvin, partner in the New York accounting firm of F. W. Lafrentz and Company and vice-president of the New York State Society of Certified Public Accountants. Mr. Marvin stressed the importance of smoothly functioning accounting machinery as an aid to management, especially in the present emergency. "Good accounting records relieve management of many operating problems," he said. "If properly designed and employed, they free management of innumerable details . . . give assurance that those aspects of the business which cannot be minutely supervised are moving smoothly and efficiently."

Baird Snyder, Deputy Administrator of the Wage and Hour Division, United States Department of Labor, spoke on the wage and hour law and its effects on utility operation. He cited interpretations and rulings that have been made in actual cases that are typical of industry problems.

A copy of Mr. Snyder's paper, which will be available in the Conference proceedings, will be a worth while addition to all company libraries for its timely informative value.

About 125 attended the general session on customers' activities Tuesday morning, at which L. A. Mayo, The Connecticut Light and Power Company, and J. A. Williams, Niagara Hudson Power Corporation, presided as co-chairmen. "Collecting Money and Good Will" was the topic of the first speaker, J. Gordon Ross, Rochester Gas and Electric Corporation. Although it is unusual to associate these two subjects, because a delinquent customer is likely to become prejudiced against his creditor, Mr. Ross declared that the utilities might well take a pointer from the retail merchant in this respect and give serious consideration to the retention of good will in formulating their collection techniques.

"Every one of the utilities' service habits will look arbitrary to the customer at one time or another," George A. Saas, Citizens Gas and Coke Utility, Indianapolis, told the group. He cited a nation-wide survey revealing that utility "courtesy" in the public mind has a much broader meaning than merely saying "please" and "thank you" and comes close to being a synonym for "satisfaction," for the satisfied customer does not feel that he has been treated discourteously. And a "spot" survey conducted by Citizens Utility found that 44 per cent of complaints concerned company rules and policies, while only five per cent had to do with rates in any way.

George W. Fuchs, Philadelphia Electric Company, presented an interim report of the subcommittee which is studying the proofs employed and statistics compiled in service billing operations. The particular method chosen, it was found, was frequently dictated by the quantity, frequency and type of statistics demanded by each company. The relation of deposits to uncollectible accounts was discussed by H. F. Quad, Public Service Electric and Gas Company, Newark. Deposit policy is best determined when it is tailored to meet the needs of individual companies, Mr. Quad said. The accountant has a very important part in this determination because it is his function to present to management the financial relationship between deposits and bad debt losses. He recommended that credit policies be reviewed in the light of the new situation caused by the placing of defense contracts.

A. M. Hartogensis, Ebasco Services Inc., and O. H. Ritenour, Washington Gas Light Company, were co-chairmen of the group session on general accounting, at which 225 were present. The paper of Kenneth C. Long, vice-presi-

(*Continued on page* 168)

E.E.I. Engineering Committees Meet at Chicago, May 5-9

THE joint spring meeting of the engineering committees of the Edison Electric Institute, which will be held at the Edgewater Beach Hotel, Chicago, May 5 to 9, is now a well established event, as the present meeting will be the eighth of a series of annual joint meetings held at the same place and at about the same time. It is good testimony to the interest this occasion holds in the engineering activities of the industry, that it appears to have no tendency to become a routine matter as to the work done, or stereotyped as to the manner in which it is done.

A review of the programs of the several committees for some years reveals that each within its normal sphere has dealt with problems appropriate to the general situation affecting the industry at the time. Thus the subjects, such as steam generators, combustion, substations, cables or distribution lines, are dealt with now from the point of view of operating economy, again from the standpoint of capacity and at another time from the standpoint of procurement, reserve stocks or protection. This, of course, is over and above the normal consideration due to advances in the art which, considering the duty for the rapid and efficient translation of such improvements into operating practice, are sufficient in themselves to justify a substantial effort toward industry-wide consideration.

At the forthcoming May meeting many of the committees will give consideration, directly or indirectly, to the problem arising out of the international situation. This has not been particularly by design, although the situation would, no doubt, justify a meeting devoted to national defense. It has rather arisen spontaneously out of the concerns of the individual members of committees. This response has been a reassuring evidence of the flexibility of the engineering committees. There is, no doubt, good reason to apprehend that groups of this kind might lapse into meaningless routines following a set list of topics which were to be talked about whether there was anything worth saying or not. That this has not occurred is due to the good sense of the committees themselves, in dealing only with subjects of sufficient immediate interest to their members to bring out their attendance.

One might ask what advantage there is in a joint meeting of a group of committees devoted to diverse subjects. In the first place the diversity is more apparent than real for the reason that the more important generalizations of any one of the specialized fields can hardly be considered very far without reference to other fields; this is the case for prime movers and electric generators, or substations and distribution systems to mention only two. Some of the committee fields actually overlap in some respects. Moreover, even if there be isolated specialists who could, if necessary, carry on in their own fields, it is probably advantageous to them and to the rest of the industry to be reminded that after all, such specialized work is not an end in itself, but is only justified according to its usefulness to the industry as a whole.

Actually, although five days are devoted to the whole meeting, which is the only general meeting of the year, few of the committees have meetings extending over more than two days, and those only occasionally. The meeting is spread out over five days to accommodate those members who belong to, or are interested in the work of, more than one committee. This year substantially all of the sessions will be held in the first three days, the remaining two days being devoted to a single committee that could not conveniently fit its schedule into the first part of the week.

It has been the custom for the past few years to hold one general session, in the form of an evening dinner meeting at which a speaker was presented to address the meeting on some subject calculated to be of general interest to the members of all committees, whatever their special interests might be. This year it has been possible to arrange that Col. H. S. Bennion, the Managing Director of the Edison Electric Institute, will address the meeting on the subject "Influence of Present Events on Our Engineering Problems." The entire program, subject to later and unavoidable changes, is presented below.

ACCIDENT PREVENTION COMMITTEE

W. R. SMITH, Chairman

May 8—10 a.m.—East Room

Accident Statistics — Report on 1940 data and trends.

Cause and Location Data.

Traffic Hazards — Line Hazards — Low Voltage Hazards.

Office Hazards — Public Safety — Electric Fences.

May 8—2 p.m.—East Room

Motion picture — *"Tree Trimming for Overhead Electric Lines"* — discussion of problems and present practices.

Lineman's Handbook — Employee Training.

Resuscitation — Progress report by Chairman of the work of the Resuscitation Review Board, and other associated matters.

May 9—9 a.m.—East Room

(Closed Session — Open to committee members and representatives of power companies.)

Report of Liaison Representatives — Edison Electric Institute Committees.

Report of Liaison Representatives — Non-Edison Electric Institute Committees.

May 9—2 p.m.

Visit to Underwriters Laboratories, Inc.

* * *

(The members of the Accident Prevention Committee have been invited to attend the Wednesday afternoon, May 7th, session of the Transmission & Distribution Committee, at which time the maintenance and operation of transmission lines will be discussed, with special reference to hot line tools. See T & D Program.)

ELECTRICAL EQUIPMENT COMMITTEE

R. W. Wilbraham, Chairman

May 5—9:30 a.m.—Michigan Room

Closed Session (attendance limited to members, and guests sponsored by members of the committee)

National Defense
H. S. Fitch, West Penn Power Co., Pittsburgh, Pa.
Apparatus Troubles
S. M. Dean, Detroit Edison Co., Detroit, Mich.
Induction Motor Changes
B. Van Ness, Jr., Pennsylvania Water & Pr. Co., Baltimore, Md.

May 5—2:00 p.m.—Michigan Room

Continuation of Closed Session

Rotating Machinery
B. Van Ness, Jr., Pennsylvania Water & Pr. Co., Baltimore, Md.
Cincinnati-Louisville Interconnection
E. S. Fields, The Cincinnati Gas & Elec. Co., Cincinnati, O.
Capacity Definitions
Stanley Stokes, Union Elec. Co., of Missouri, St. Louis, Mo.

May 6—9:00 a.m.—Michigan Room

Open Session

Electric Power Supply in the Aluminum Industry
D. I. Bohn, Electrical Engineer, Aluminum Co. of America.
Switchboards, Switchgear and Enclosures
E. B. Shew, Philadelphia Elec. Co., Philadelphia, Pa.
An Unusual Hydroelectric Development in Serra, Brazil
A. V. DeBeech, Canadian & General Finance Corp., Toronto, Canada.
The Cincinnati Electric System
E. S. Fields, The Cincinnati Gas & Elec. Co., Cincinnati, O.
Foreign Practice Group Report
A. V. DeBeech, Canadian & General Finance Corp., Toronto, Ont.

May 6—2:00 p.m.—Ballroom

Joint Session with Transmission and Distribution Committee.

Motor Starting Currents
J. H. Foote, The Commonwealth & Southern Corp., Jackson, Mich.
Gilbert Cooley, Long Island Lighting Co., Roslyn, N. Y.
Utilization Voltages
C. E. Arvidson, Commonwealth & Southern Corp., Jackson, Mich.
Report of Depreciation Subcommittee of Transmission & Distribution Committee
M. D. Hooven, Public Serv. Elec. & Gas Co., Newark, N. J.
System Planning
E. A. Hester, Duquesne Light Co., Pittsburgh, Pa.
Meter and Services Committee Report
A. E. Silver, Ebasco Services, Inc., New York City.

HYDRAULIC POWER COMMITTEE

E. B. Strowger, Chairman

May 5 — 9:30 a. m. — East Room
May 6 — 9:30 a. m. — East Room

System Load Swings and Governing
Reserve Capacity as Reported to the Federal Power Commission
Upkeep of Masonry Dams
Specifications Covering the Purchase of a Kaplan Turbine
Report on Outages of Hydro Electric Units
E. S. Loane, Pennsylvania Water & Power Co., Baltimore, Md.
C. W. Watchorn, Pennsylvania Water & Pr. Co., Baltimore, Md.
Report on Meeting of American Geophysical Union
C. F. Merriam, Pennsylvania Water & Power Co., Baltimore, Md.

METERS AND SERVICES COMMITTEE

F. E. Davis, Chairman

May 5—9:00 a.m.—West Room
May 5—2:00 p.m.—West Room

Standardization of Current Transformers for Primary Circuits
Standardization of Demand Register Seals
Standardization of Therman Demand Meter Rating and Seals
Joint Committee on Standardization of Electricity Meters
Meter Nameplates
Cumulative Demand Registers
Corrosion of Meters
Phase Shifting Devices
Safety Practices
Meter Performance in Iron Enclosures

(The AEIC Committee on Metering and Service Methods will meet on May 6th.)

PRIME MOVERS COMMITTEE

E. L. Hopping, Chairman

May 5—10:00 a.m.—East Lounge
May 5—2:00 p.m.—East Lounge
May 6—9:30 a.m.—East Lounge

Report of Status of Subcommittees
Boilers and Combustion Subcommittee
J. F. Muir, American Water Works & Elec. Co., New York City.
Boiler Auxiliaries Subcommittee
Chemistry Subcommittee
H. C. Miller, Public Serv. Elec. & Gas Co., Irvington, N. J.
Metallurgical and Piping Subcommittee
H. N. Boetcher, Consolidated Gas, Elec. Lt. & Pr. Co., Baltimore, Md.
Oil and Gas Power Subcommittee
J. M. Drabelle, Iowa Electric Light & Pr. Co., Cedar Rapids, Iowa.
Power Station Data Subcommittee
E. H. Krieg, American Gas & Elec. Service Corp., N. Y. C.
Turbines and Condensers Subcommittee
G. C. Daniels, Commonwealth & Southern Corp., Jackson, Mich.
Round Table Discussion
J. A. Keeth, Kansas City Pr. & Lt. Co., Kansas City, Mo.

TRANSMISSION AND DISTRIBUTION COMMITTEE

W. F. NIMMO, Chairman

Attendance Limited to Committee Members, Representatives of Light and Power Utility Companies and Invited Guests

Underground Group

T. G. HIERONYMUS, Chairman

May 5—9:30 a.m.—Ballroom

Low Voltage A. C. Networks
E. W. OESTERREICH, Duquesne Light Co., Pittsburgh, Pa.

Investigation of Cable Temperatures

Cold Setting Compounds for Temporary Cable Joints
L. I. KOMIVES, Detroit Edison Co., Detroit, Mich.

Non-Inflammable Liquid Filled Transformers
M. W. GHÈN, Duquesne Light Co., Pittsburgh, Pa.

Cable Tests for Group Reduction Factors
C. H. MOORE

Symposium on Cable Corrosion
A. S. BROOKES, Public Service Elec. & Gas Co., Newark, N. J.

Corrosion of Subway Transformer Tanks
J. A. TEN BROOK, Philadelphia Elec. Co., Philadelphia, Pa.

May 5—2:00 p.m.—Ballroom

Illustrated Talk, Power Factor Testing of Transformers
J. B. HODTUM, Allis-Chalmers Mfg. Co., Pittsburgh, Pa.

Cable Operations
A. B. CAMPBELL, Edison Electric Institute, New York, N. Y.

Economic Justification of Increased Cable Ratings for War Industry Loads
E. W. OESTERREICH, Duquesne Light Co., Pittsburgh, Pa.

Training of Cable Splicers and Helpers
J. A. TEN BROOK, Philadelphia Electric Co., Philadelphia, Pa.

Report, AEIC Study in Cable Sizes, Etc. A defense measure to limit stocks and eliminate special sizes.
L. I. KOMIVES, Detroit Edison Co., Detroit, Mich.

Styrene and Its Uses
T. R. SCOTT, Standard Telephone and Cables Ltd., London, Eng.

Underground Problems in England
K. S. WYATT, Habirshaw Wire & Cable Co.
(After this session a closed session, open to committee members only, will be held.)

Standards and Specifications Group

E. V. SAYLES, Chairman

May 6—9:15 a.m.—Ballroom

Status of EEI Standards and Specifications
E. V. SAYLES, The Commonwealth & Southern Corp., Jackson, Mich.

Line Hardware
E. H. KENDALL, The Commonwealth & Southern Corp., Jackson, Mich.

Timber Products
W. McLEAN, Consolidated Gas, El. Lt. & Pr. Co., Baltimore, Md.

Distribution Fuses
C. C. CORNELIUS, Kansas City Power & Lt. Co., Kansas City, Mo.

Porcelain Insulators
G. E. DEAN, Public Service Elec. & Gas Co., Newark, N. J.

Design and Application of Radio-Interference-Free Insulators
CHARLES J. MILLER, JR., Ohio Brass Co., Mansfield, O.
GEORGE L. McCREERY, Ohio Brass Co., Mansfield, O.

Second Report, EEI-NEMA Joint Committee on Distribution Transformer Standards
A. E. SILVER, Ebasco Services, Inc., New York, N. Y.

May 6—2:00 p.m.—Ballroom

Joint session — Electrical Equipment Committee and Transmission and Distribution Committee.
See Electrical Equipment Committee program.

Overhead Distribution Group

G. H. FIEDLER, Chairman

May 7—9:15 a.m.—Ballroom

Utilization Voltages
C. E. ARVIDSON, The Commonwealth & Southern Corp, Jackson, Mich.

Capacitor Performances and Operation
M. C. MILLER, Ebasco Services, Inc., New York, N. Y.

Shop Maintenance and Repair of Distribution Transformers
FRANK SANFORD, Cincinnati Gas & Elec. Co., Cincinnati, O.

Service Restoring Fuses and Switches
C. V. WADDINGTON, Kansas Gas and Electric Co., Wichita, Kan.

Plant Coordination Group

May 7—12:00 m—Ballroom

Report of Activities
H. E. KENT, Edison Electric Institute, New York, N. Y.

Overhead Transmission Group

D. M. BUNN, Chairman

May 7—2:00 p.m.—Ballroom

Discussions of Problems in Railroad Electrification
H. F. BROWN, N. Y., New Haven & Hartford R. R., New Haven, Conn.
Another speaker to be announced.

Lightning Resistance 66 kv Transmission Lines
W. R. METZGER
E. R. WHITEHEAD
(Motion picture film shown in connection with this paper made available by courtesy of Hubbard and Company.)

Motion Picture, "Keeping Them Hot"
H. A. ENOS, American Gas & Elec. Serv. Corp., New York, N. Y.

Live Line Tools
L. L. CRUMP, James R. Kearney Corp., St. Louis, Mo.

Live Line Maintenance and Some Recent Developments
D. C. HUBBARD, A. B. Chance Co.

DINNER MEETING OF ALL COMMITTEES

May 5—7 p.m.—Ballroom

"Influence of Present Events on Our Engineering Problems"
COL. H. S. BENNION, Vice President and Managing Director, Edison Electric Institute, New York City.

PERSONALS

J. B. THOMAS, formerly vice-president and general manager of Texas Electric Service Company, Fort Worth, has been elected president and general manager of the company. He succeeds A. J. Duncan, who has been advanced to chairman of the board of directors.

Mr. Thomas, a native Texan and a graduate of Texas Agricultural and Mechanical College, has been associated with electric utilities in the state since 1912, when he joined the engineering department of Texas Power and Light Company in Dallas. He became chief engineer for the company and its affiliates in 1921 and during the next eight years was active in the construction of the high-tension network that now spreads over Texas. In 1930 he went to Fort Worth as vice-president in charge of operations of the new Texas Electric Service Company. Later he became executive vice-president and then vice-president and general manager.

RICHARD E. SWIFT has been named vice-president and general manager of Atlantic City Electric Company, succeeding to the post vacated by E. A. Lewis recently when he became vice-president and general manager of Indiana and Michigan Electric Company.

A Virginian, Mr. Swift was educated at Virginia Military Institute. He began his utility career in the sales department of Scranton Electric Company in 1911 and three years later joined the sales force of Atlantic City Electric. In 1917 he was promoted to the position of commercial manager. He became assistant general manager of the company in 1935.

GEORGE S. STEVENSON of Hartford has been elected a director of The Connecticut Light and Power Company. Mr. Stevenson is president of the New Haven Savings Bank and has been active in banking for many years. He is a director of Hartford Fire Insurance Company, Hartford Accident and Indemnity Company and Phoenix Mutual Life Insurance Company, and is connected with several manufacturing concerns.

EDWIN S. WEBSTER, co-founder of Stone and Webster, Inc., has been elected chairman of the board, succeeding the late Charles A. Stone. The office of vice-chairman, formerly held by Mr. Webster, has been eliminated.

FRED D. KNIGHT, for the past four years superintendent of production for Boston Edison Company, has joined Hartford (Conn.) Electric Light Company as assistant to the operating vice-president. He had been associated with Boston Edison 16 years, entering its service as assistant superintendent of production when service was begun at the Edgar station. Before entering the University of Maine, from which he graduated in 1909, Mr. Knight was employed for one year by Boston Elevated Railway and for three years by General Electric Company at Lynn, Mass. He was in charge of construction of the South Meadow station at Hartford for Stone and Webster Engineering Corporation and served that organization on major construction jobs throughout the country for 16 years before coming to Boston Edison.

H. P. HOHEISEL has been appointed advertising and publicity manager of Oklahoma Gas and Electric Company, succeeding the late Leonard F. Nelson. Mr. Hoheisel has been connected with the company for 21 years and advances to his new post from the sales department.

ERROL W. DOEBLER has been elected a vice-president of Long Island Lighting Company and will be in charge of gas and electric operations, engineering and construction for the company. He had previously been elected a vice-president of Nassau and Suffolk Lighting Company and of Long Beach Gas Company.

Mr. Doebler joined Long Island Lighting Company in 1927 as assistant to Fred H. Maidment in the commercial department in Nassau County. In 1937 he was appointed general operating manager in charge of gas and electric operations, engineering and construction for Long Island Lighting and gas operations for Nassau and Suffolk Lighting and Long Beach Gas, and has served in that capacity until his new elevation. He is also responsible for the general supervision of transportation and safety. A graduate of Cornell University, Mr. Doebler formerly was associated with the Portland Cement Association, the consulting engineering firm of Hazen, Whipple and Fuller and the teaching staff of Swarthmore College.

FRED H. MAIDMENT is relinquishing his administrative duties as vice-president of Long Island Lighting Company under the company's retirement annuity plan, but will continue to be a director and consultant. He has been associated with the system and predecessor companies for 40 years.

THOMAS P. BOOTH has been appointed controller of Long Island Lighting Company. He will continue to be the chief accounting officer and have charge of the accounting department.

Public Service Electric and Gas Company, Newark, N. J., has announced three promotions in the electric engineering department, general office.

HERMAN WEISBERG, formerly assistant mechanical engineer, has been appointed mechanical engineer. Mr. Weisberg joined United Engineers and Constructors, Inc., as operating and supervising engineer in 1928. In 1935 he became planning and installation engineer in the generation department of Public Service, and in 1936 was transferred to the electric engineering department as assistant mechanical engineer.

ROELOF BLONK, a member of the electric engineering department since 1936, has been appointed structural engineer. A graduate of the University of Holland, he started with Public Service Production Company in 1923.

BERT DUGDALE, who joined Public Service in 1914, was named assistant structural engineer. He has been a member of the electric engineering department since 1935.

JAMES M. STAFFORD, JR., assistant advertising manager, Georgia Power Company, has been selected by the Atlanta Advertising Club to head its "Truth About Advertising" campaign.

New assignments were announced recently in the organization of Rochester Gas and Electric Corporation.

ROBERT E. GINNA, superintendent of the rate and contract department, has been appointed to the additional position of assistant to the president, Herman Russell. He will carry out special assignments from the president while continuing his present duties.

E. R. CROFTS, formerly general superintendent of electrical operations, has been made assistant to Vice-President

Joseph P. Haftenkamp and will remain in charge of operations.

JOHN F. CLARK will succeed the late Ernest C. Scobell as controller. Mr. Clark will continue to be treasurer of the company.

WALTER CONSLER has been advanced from superintendent of electric distribution to general superintendent of electrical operations, succeeding Mr. Crofts. Mr. Consler has been with the organization since 1900 and has served as foreman of the electric meter department, foreman of the line department and assistant superintendent of electric distribution.

HARVEY KLUMB will succeed Mr. Consler as superintendent of electric distribution. Joining the company in 1916, Mr. Klumb advanced to become head of the electric laboratory and later assistant superintendent of electric distribution.

Accounting Conference

(*Continued from page* 163)

dent and associate general manager, Dayton Power and Light Company, on "Budgetary Control—A Method of Management" was read by C. P. Pfarrer, vice-president and general counsel of the company. Declaring that he knew of no more important aid to management than the knowledge which may come through use of the budget and related reports, Mr. Long stated that, "Dollars spent today in solving a problem will be wasted unless the results of today's expenditures are productive in the light of future requirements." He outlined methods and benefits of the budgetary control system used by Dayton Power and Light.

F. Warren Cooper, Public Service Electric and Gas Company, presented the paper of Fred Seinecke, New York and Queens Electric Light and Power Company, on "Development of Manuals of Procedure." The paper gave a resume of opinions and experience as disclosed in answers to a questionnaire of limited scope sent to about 40 companies by the subcommittee studying this subject. Purposes for which manuals may be used and steps in their development were outlined. It is hoped that the subcommittee may later find it possible to prepare pamphlets describing various systems and their cost of operation.

As a progress report on studies now being made, J. B. Thurston, North American Company, presented a comprehensive paper on "Internal Audits, a Vital Need of Management." Mr. Thurston outlined three major functions of the modern internal auditor: "(1) he acts as an arm of management; (2) he rounds out and perfects the system of internal control, and (3) he participates in the verifications of financial statements." The work of the internal auditor dovetails with that of the public accountant, it was further pointed out, and minimizes the detail work of the latter.

Frank P. Clark, Kansas City Power and Light Company, chairman of the Subcommittee on Regulatory Problems, presided over the remaining part of this session. Three papers on State and Federal regulation were delivered: "Some Problems in State Regulation of Natural Gas Rates," by F. W. Peters, Oklahoma Natural Gas Company, Tulsa, read by H. C. Hasbrouck, Atlantic Utility Service Corporation; "Preparation and Presentation of Accounting Data in Regulatory Rate Hearings," by L. G. James, Lone Star Gas Company, Dallas, and "Examiner's Report on Original Cost," by Mr. Clark.

The conference sessions were concluded Tuesday afternoon. On Wednesday morning many of the visiting accountants were guests of Cincinnati Gas and Electric Company on a tour of the company's accounting plant.

Selected papers from both the general and group sessions will be published in the May issue of the BULLETIN.

CONVENTIONS AND MEETINGS

APRIL

7-8	5th National Accounting Conference, AGA-EEI, Netherland Plaza Hotel, Cincinnati, Ohio.
14-15	Missouri Valley Electric Association, Rural and Sales Conference, Continental Hotel, Kansas City, Mo.
18	Maryland Utilities Association, Lord Baltimore Hotel, Baltimore, Md.
22-25	Greater New York Safety Council, 12th Annual Safety Convention and Exposition, Hotel Pennsylvania, New York, N. Y.
23-25	Missouri Association of Public Utilities, The Elms, Excelsior Springs, Mo.
28-29	Arkansas Utilities Association, Arlington Hotel, Hot Springs, Ark.
29-30	Chamber of Commerce of the U. S. A., Washington, D. C.

MAY

1-3	Southeastern Electric Exchange, Annual Convention, Bon Air Hotel, Augusta, Ga.
5-9	Engineering Committees, E.E.I., Edgewater Beach Hotel, Chicago, Ill.
11-15	National Electrical Manufacturers Association, The Homestead, Hot Springs, Va.
12-17	National Fire Protection Association, Royal York Hotel, Toronto Can.
18-23	National Electrical Wholesalers Association, The Homestead, Hot Springs, Va.
21-24	Pacific Coast Electrical Association, Annual Convention, Hotel del Coronado, Coronado, Calif.
22-23	Missouri Valley Electric Association, Accounting Conference, Continental Hotel, Kansas City, Mo.
23-27	Westinghouse Agent-Jobbers Association, The Homestead, Hot Springs, Va.
26-29	National Association of Purchasing Agents, Chicago, Ill.

JUNE

2-5	EDISON ELECTRIC INSTITUTE, Buffalo, N. Y.
10-13	National District Heating Association, William Penn Hotel, Pittsburgh, Pa.
16-20	American Institute of Electrical Engineers, Summer Convention, Toronto, Can.
25-27	Canadian Electrical Association, Seigniory Club, Province of Quebec, Canada.

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1940-1941

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Codes and Standards (a Subcommittee of the Operating Committee)
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